amateur radio

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

VOL. 48, No. 11 NOVEMBER 1980

FEATURED IN THIS ISSUE:

- ★ *1980 REMEMBRANCE DAY CONTEST RESULTS*
- ★ *PRACTICAL MOBILE ANTENNAS*
- ★ *DELTA-YAGI — THE ANSWER?*
- ★ *COLLECTORS' CORNER No. 4 — THE IC260A/E*

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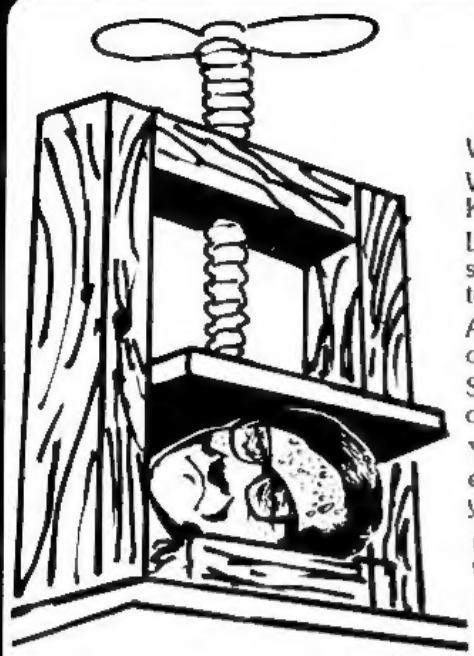

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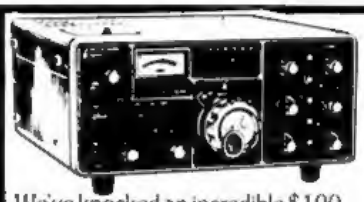

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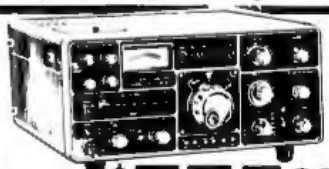

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Published monthly as its official journal by the Wireless Institute of Australia, founded 1910.

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NOVEMBER 1980
VOL. 48, No. 11

PRICE: $1.20

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Caulfield North 3161.

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Material should be sent direct to **P.O. Box 150, Toorak, Vic., 3142,** by the **26th of the second month preceding publication. Phone: (03) 526 5962.** Hamads should be sent direct to the same address by the **1st of the month preceding publication.**

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Typesetting: MUELLER INDUSTRIES
1a Levanswell Road, Moorabbin, 3189
Tel.: 553 0292

Printers: WAVERLEY OFFSET PUBLISHING GROUP
Geddes Street, Mulgrave 3170

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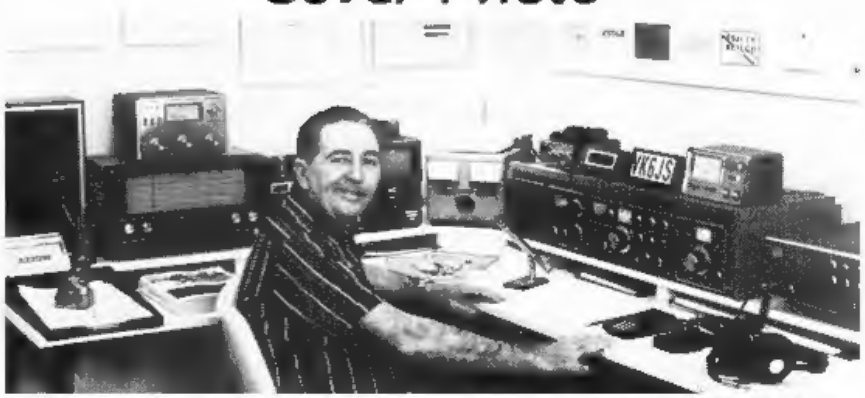

Pictured this month is the ever smiling face of Jack Swiney VK6JS. Jack was the initiator of the VKCW QRP Club which is increasing in membership steadily and in doing so bringing back a valued aspect of Amateur Radio. Jack is also known in many circles for his untiring efforts in "paper chasing" for others as well as himself.

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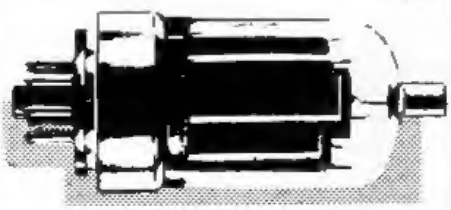

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QSP QSP QSP

HOW TO ALTER POLICIES ETC.

One of the more important of the functions of the Institute is that of representations to the licensing and control authorities on amateur radio matters.

WIA liaison with the Postal and Telecommunications Department occurs on a more or less daily basis in both State and Federal spheres but, in addition, Committee meetings are held on two levels.

These are (a) in the States where local Joint Committees have been or are being established, and

(b) Federally where the Joint Committee has been operational for some years.

The local State Joint Committees, as a general rule, involve the Divisional President with Councillors for the WIA and the State Superintendent with members of his staff for the P. and T. Department. Much valuable negotiation and representations take place on matters relating to amateur activities within the State such as administrative decisions causing local problems, State repeaters, broadcasts and so forth.

At the Federal level, the President with members of the Executive meet on a normally quarterly basis with the senior officers of Central Office. At these meetings policy matters and related issues occupy much of the time in addition to administrative problems seen to affect several States or which are of a Federal nature.

The last such meeting was held on 8th October when some long outstanding issues were finalised and some progress towards finality on others was made.

Among the items discussed were —

- **a number of examination subjects and including a promise that broad statistics would be supplied;**
- **the possibilities of a combined LAOCP/NAOCP licence;**
- **authorisation for full and limited call operators to use F5(TV) in the 23 cm band for a trial period of six months subject to non-interference to the primary service stations therein;**
- **agreement approaching, at least, towards some restricted use of the 50 to 50.15 MHz segment;**
- **conclusion of an agreement about beacon conditions;**
- **several other licensing, call sign and WICEN matters.**

All this work, remember, benefits the amateur service in Australia as a whole and the subjects generally derive from Federal Conventions and cases put forward by both Divisions and individual amateurs as the case may be.

P. A. WOLFENDEN VK3ZPA
Federal President. ■

AFTERTHOUGHTS

Since submitting the 5W CW transmitter (Sept. '80), a few shortcomings in the design have come to my notice after extended testing:

- **If the Tx is to be used on 21 MHz, the amount of inductance at L1 is too great, and could result in uncontrolled operation of the VXO. The remedy is to simply remove the slug from L1. The amount of crystal pull on the lower bands will then be slightly reduced. If the Tx is not to be used on 21 MHz, then the slug can remain.**
- **The voltage shown at the collector of Q4 is incorrect. It should read 12V with the key down.**
- **By-pass capacitor C23 is not necessary, and in fact could cause instability in the output stage, and should therefore be left out of the circuit.**

If sufficient interest is shown in this Tx, arrangements will be made to have the circuit boards made professionally. If anyone has problems in building this project, please write or call and I shall give any reasonable amount of help necessary.

Drew Diamond VK3XU. ■

QSP

The **South Australian "OLD TIMERS" Dinner** will be held at the **Marion Hotel, Marion Road, Mitchell Park,** South Australia on **November 19th,** commencing at **12.30 p.m.**

Tickets are $9.00 and all old timers will be most welcome.

For further enquiries regarding this dinner, please contact **George Luxon VK5RX** (Hon. Secretary) **203 Belair Road, Torrens Park, S.A. 5062.** ■

WIANEWS

UHF TELEVISION

In a letter from the P. and T. Department in September it was stated that Government is increasingly authorising the use of the UHF band for TV channels throughout Australia, both for main stations and for translators. The extracts to follow are of interest:—

"Many individuals and television industry groups throughout Australia are, however, not fully aware of plans for UHF television channels. I am therefore writing to you and to other representatives of manufacturing, importing, retailing, servicing and related organisations to outline the Government's intentions in this regard.

An information pamphlet on UHF television will soon be available to business organisations and the general public. This will explain what the UHF band is, how it will be used and how to adapt receivers for best reception. By thus making people aware of the television services which will be provided by UHF, I hope that industry will be encouraged to produce and provide more sets with a UHF capacity, and that the public will take UHF services into consideration when buying television sets."

"The Department is investigating the full potential of the UHF band to accommodate future new television services. Meanwhile, however, a number of decisions have already been made to use UHF for television in particular areas. These include the decision to simulcast multicultural television services in Sydney and Melbourne from October 1980 on VHF as well as on UHF operating in television Band IV."

"It is not possible at this stage to provide comprehensive plans for the overall development of UHF television services, but the following general planning criteria can be used as a guide:—

Current intentions are that the lower part of the UHF broadcasting band from approximately 520-620 MHz will be reserved for wide coverage television services, while the upper part of the band from 650-820 MHz will be reserved for television translator services to fill in areas of poor reception. The intervening section, from 620-650 MHz, will be held in reserve to meet other demands as they eventuate."

"In conclusion, I should like to say that by using the UHF band for television, the Government is able to service areas not reached formerly because of the lack of available VHF frequencies. The UHF band will increasingly be used to make good television reception available to as many Australians as possible.

I hope that this letter clarifies any doubts there may be on our intentions to develop UHF television services."

BEACONS

Correspondence with Central Office is proceeding in relation to conditions of operation for amateur beacons. Basically these are set out in paragraph 5.12 in the Handbook but it was suggested that licences be issued only to those persons with "AOCP status". The Department will be asked to amend this to read "AOCP technical status". Call sign ident is to be made at regular intervals not less than once in every five minutes.

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RON WILKINSON (VK3AKC) ACHIEVEMENT AWARD

Who should be considered for this Award in 1980? If you have a name to put forward send it now to the President of your Division with your reasons.

IONOSPHERIC PREDICTIONS

At the suggestion of VK5 an attempt was made to have ionospheric predictions broadcast over VNG. Unfortunately this is not presently possible.

BEACON CONDITIONS

Correspondence with the P. and T. Department relating to beacon conditions has been revived to the point of near finality.

LICENCE FEES

The Institute has been following up recent publicity about the possibility of "Clubs" (CB and Amateur) collecting licence fees on behalf of the Department on a commission basis.

EDP

Assisted by Derek McNiel VK3BYA, the Executive are examining what steps can be taken to improve the efficiency of our data processing systems. ■

QSP

KEYS

I am by occupation an engineer, and have for many years harboured an interest in Amateur Radio. The opportunity to further this interest, however, did not come my way until last year.

Given that commercial morse keys combine almost identical designs with a certain lack of imagination, I have always felt the desire to produce something original. In addition, complaints from other amateurs soon revealed that most commercial morse keys were not nearly heavy enough, and were therefore prone to shifting.

The results of all these thoughts was the morse key shown in the photograph. I have found that my design is simpler and more practical than those currently on the market, yet works just as well. The base is a solid metal block measuring 16.5 cm by 7.5 cm by 2 cm, and is of course far too heavy to permit any shifting. The remaining parts of the key are made of hardened bronze, cunningly insulated where necessary.

Hopefully my successful experiment will prove to others that the last word on Morse Key design has not yet been said. Why not build your own better Morse Key? If any interested persons require more information, feel free to contact me — Nick Rozakeas (callsign pending), 94 Glenlyon Rd., Brunswick East, 3057. ■

SCALAR

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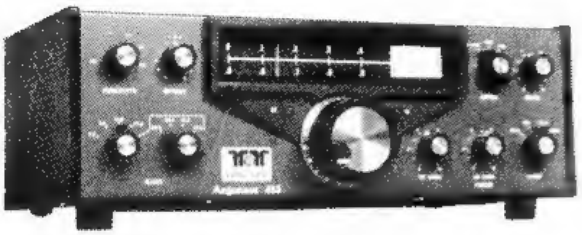

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Practical Mobile Antennas

Arthur Brown VK2IK
26 Winifred Avenue, Epping, N.S.W. 2121

One of the interesting features of amateur radio nowadays is the relative ease whereby mobile communications can be maintained over wide ranging distances at home and abroad. The most important requirement, of course, is a good transceiver. With the advent of the complete solid state transceiver the bulk and weight of equipment and power demands from the vehicle battery have been dramatically reduced.

The second most important requirement is a range of antennas ta suit the intended bands of operation. Many of these are available on the commercial market, however, if one has a small workshop, equally good results can be obtained from homebrew models.

"G" WHIP

One commercial antenna on the British market is the "G" whip produced by GW3DZJ. This unit is very versatile and, with helical sections, loading coils and an adjustable top whip section, enables coverage from 28 MHz through to 1.8 MHz. I have been using one of these since 1975 when it was originally mounted on the snub nose of a Bedford Campervan which was used in Britain and Scandinavia. The adjustable top on its own is also usable for 146 MHz FM mobile.

The "G" whip is essentially a fibreglass helical base section resonant for 28 MHz. Being 106 cm long (5 ft. 4 in.), this was cut in half and brass threaded couplings fitted so that for overseas mobiling the whole antenna could be carried in a travel bag with clothing, etc. (See previous article on Mobiling the American and Canadian Rockies.)

For operation on 21 MHz and 14 MHz a double section helical is pushed into a socket on the top of the lower helical. A sliding connector allows a 17 cm length of helical to resonate on 21 MHz, and an additional length of 40 cm to operate on 14 MHz. For all other bands 7, 3.5 and 1.8 MHz loading coils and the adjustable whip section replace the top double section helical.

For the purpose of this article, however, it is intended to describe the present antenna systems as used on our Ford Transit van and in particular a multi-band switched centre loading coil. During the late 60s a tall centre loaded whip was developed with individual coils for each band from 28 to 1.8 MHz. These worked very successfully but suffered the disadvantage of having to screw 6 joints for each time a band change was desired, i.e. 3 to undo and 3 to replace. The present system requires to stop, push a slide switch and resume mobile operation (21-3.5 MHz).

ANTENNA MOUNTS

The vehicle is fitted with 3 mounting positions for antennas—one on a bracket above the front bumper passenger's side; another on the front mudguard driver's side and another on top of the van canopy which gives a good ground plane effect (see photo 1). All 3 positions will accept all antennas HF and VHF, including the "G" whip. For obvious reasons, however, with the roof being 2m above ground only a hinged 146 MHz quarter wave whip is used in this location whilst mobile.

The first location fitted with a heavy duty spring and wooden support rod from the bodywork is normally used for the HF antennas. The second location takes a fibreglass dual purpose 146 MHz ⅝ wavelength/52.525 MHz ¼ wavelength VHF antenna. This duality is obtained by a changeover of trombone stubs to obtain resonance for the desired band. See Fig. 1 for details. The rooftop location is strongly mounted so that the tallest HF antenna may be screwed in for "stationary mobile" operation under wind free conditions.

MAIN HF ANTENNA

The main HF antenna length is 364 cm (approximately 12 ft.) which includes the mounting spring and lead from coax connector. With the height of the coax connection above ground of 84 cm (2 ft. 9 in.) this makes the tip of the antenna almost 15 feet above the road level. This clears most obstructions but not all garages or low tree branches so care has to be observed especially when changing antennas near low power lines. For 14 MHz operation under stationary mobile conditions, a centre section of tubing (189 cm) can be used instead of the coil which then becomes a quarter wave whip with height above ground of approximately 19 feet. It is definitely not recommended to erect this under power mains, otherwise it could be QRT and ambulance mobile!!

A comparison test made on 14.2 MHz with the "G" whip as a reference shows about a half "S" point increase in gain with the centre loaded whip and another half "S" as a quarter wave whip. Additionally the gain of each antenna is raised another half "S' 'point when located on the rooftop without a breeze!! (Guying would solve it, I guess.)

CONSTRUCTION OF A MULTI-BAND LOADING COIL

The starting point is to make a coil former 15.5 cm long, 5 cm in diameter (6 x 2 in.), from PVC tubing (see Fig. 2). Solid ends of

PHOTO 1: Ford Transit van showing dual frequency VHF whip, multiband HF loading G-land whip, and 146 MHz whip on rear top of van.

1.25 cm thick PVC are turned on a lathe (or cut by hand!) to fit neatly in the ends. These are cemented in position with PVC cement and, when solidified, drilled and tapped to take a 1 cm (⅜ in.) thread. The type of thread is not critical, though a medium fine, e.g. BSF 20 threads per inch (8 TP cm) is suitable. A matching button die should be obtained at the same

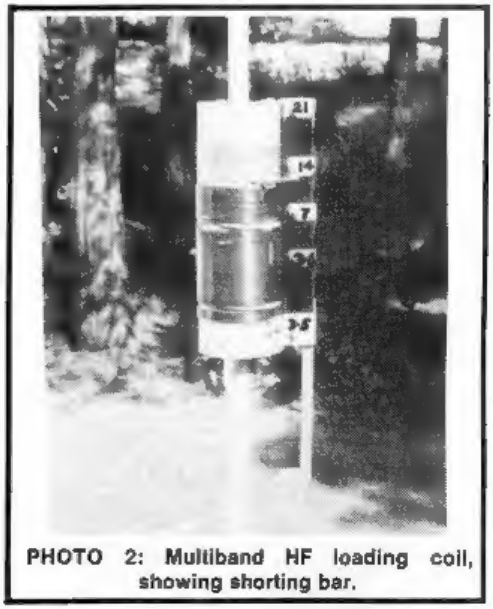


PHOTO 2: Multiband HF loading coil, showing shorting bar.

time as the tap so that mating parts can be made to screw together. Two large washers of aluminium should be cut to fit the ends and secured with self-tapping screws. This will allow electrical connnections to be made to the coil ends and the tubing ends when screwed together. Again a lathe (or laborious handwork) will be needed to cut solid aluminium rod to screw into the ends of the coil former and to be able to be rivetted with aluminium rivetts on to the tubing. The lower section should be 1.5 cm or ⅝ in. diameter and the upper section 1 cm or ⅜ in. tapered to the top with a 3.2 mm (⅛ in.) diameter aluminium welding rod or short section of 1.6 mm (1/16 in.) galvanised wire about 40 cm long. This top piece will be cut about in the tuning process and will be a different length when used on different vehicles. Changing mine to the car with rear bumper mounts requires it to be 8 cm longer. Alternately a normal car radio telescopic whip may be incorporated in the top section.

INITIAL ADJUSTMENTS

Basically this antenna will be a quarter wave 21 MHz antenna. This occurs when the coil is shorted through, so the coil should be initially jumpered through, and the top of the whip adjusted for resonance at, say, 21.2 MHz. Several methods can be used to achieve this, but my method is as follows:—First of all use a GDO with a loop turn at the transmitter end of the coax cable and find the resonant frequency. Listening to the GDO on the receiver will give the exact frequency. The top of the whip can be adjusted so that resonance is occurring in the mid-region of the band. In using the GDO do not be beguiled by some of the spurious dips that show up. If changing the top of the whip does not alter the GDO dip then you have a spurious one! Ignore it and look for one near the theoretical frequency.

The transmitter can now be used at low power in conjunction with the SWR Bridge set at full gain, and making small adjustments of the whip top to obtain the best SWR. Fixing points should be located on the former to take the coil ends. These may be small soldering lugs affixed with self-tapping screws. The first coil may now be wound for 14 MHz (see Fig. 2) with turns spaced over a length of approximately 2 cm. The bottom of the coil is jumpered to the base section and the frequency of resonance measured and the coil separation adjusted to bring it to resonate at 14.2 MHz.

This procedure is repeated for the 7 MHz coil which is in series now with the 14 MHz coil. The number of turns or separation is adjusted to resonate at 7.07 MHz. The bottom of the coil is jumpered to the base section also as previously during adjustment.

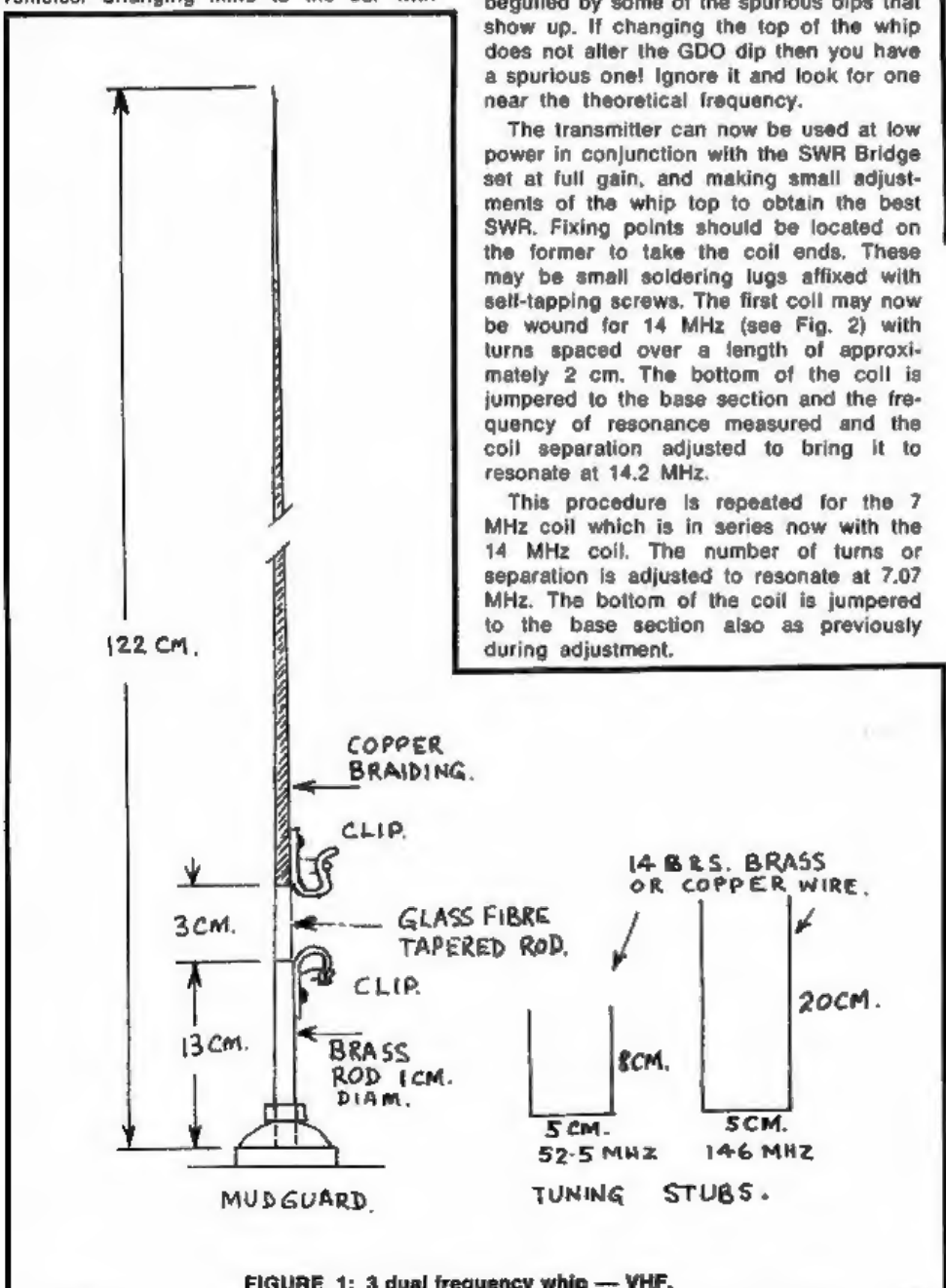


FIGURE 1: 3 dual frequency whip — VHF.

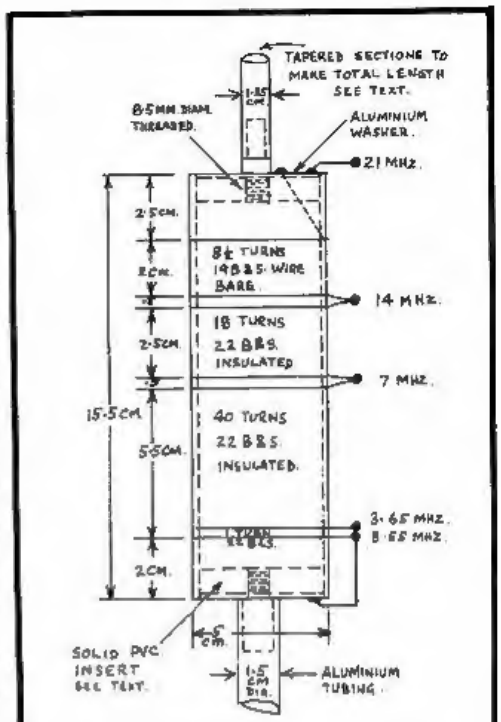


FIG. 2: Multi-band loading coil — HF.

The 3.5 MHz coil is now similarly wound and tested. However, because of the highly resonant characteristic of this section two tappings have been provided, one to resonate at 3.65 MHz and the other for 3.55 MHz.

THE TRICKY PART

The next operation is the tricky part and depends upon the reader's mechanical ingenuity. What is now required in some form of shorting bar which will progressively short out sections of the coil. The simplest would be to use a short flexible jumper with an alligator clip. A connection should be made to the base aluminium tubing by a screw and lug to the earlier mentioned large aluminium washers at the ends of the coil.

My first experimental switch was a rotary one at the bottom of the coil. Although it worked well for 21, 14 and 7 MHz, the result on 3.5 MHz was a disaster. It was a lesson in dielectric heating and of the high voltages that develop across a highly resonant coil at this frequency. Arc paths and carbonised tracking took place through half cm thicknesses of the PVC. Additionally coil insulation was damaged. The answer lies in providing a shorting bar that shorts out the required sections without allowing any electrical conductor from the top of the coil to be near the bottom of the coil when on the 3.55/3.65 MHz settings. The final design shown in photo 2 has proven quite satisfactory. To describe it fully would require detailed drawings. However, as may be seen in the photo there are 2 strips of bakelite 2 cm wide the full length of the coil supported at the ends by combination brackets/spring switch wipers. The

material is thin gauge springy duralumin (offcuts from Permalum house cladding material). The slider is 3.2 mm aluminium cut into a shape which makes it captive when inserted between the bakelite strips and a 3.2 mm (⅛ in.) spacing strip of bakelite. The intermediate switch wipers are of similar material to the end wipers. All connections are to soldering lugs bolted to the bakelite strips and switch wipers.

When the whole assembly is completed final readjustment will be necessary working downwards from the whip top on 21.2 MHz and then through 14.2, 7.07, 3.65 and 3.55 MHz.

To make provision for 28 MHz a separate whip top is screwed on top of the base section without the use of the coil. This section is partly a car radio antenna with a length of 110 cm being suitable.

Table 1 shows the sort of SWR results which have been achieved with the home-brew antennas in their normal locations. They are not necessarily ideal, however results are very satisfactory.

TABLE 1

Frequency In MHz	SWR (sensitivity set at ¾ full scale)
3.50 MHz	3.4:1
3.55 MHz	1.4:1
3.60 MHz	2.5:1
3.60 MHz	2.5:1
3.65 MHz	1.2:1
3.70 MHz	2.5:1
7.00 MHz	1.6:1
7.10 MHz	1.7:1
7.15 MHz	2.2:1
14.00 MHz	1.4:1
14.20 MHz	1.2:1
14.35 MHz	1.2:1
With centre section	
14.00 MHz	1.05:1
14.20 MHz	1.03:1
14.35 MHz	1.01:1
21.00 MHz	1.05:1
21.30 MHz	1.05:1
21.45 MHz	1.10:1
Short top, no coil	
28.50 MHz	1.05:1
28.75 MHz	1.10:1
29.00 MHz	1.12:1
Dual VHF Ant.	Sensitivity to ¼ f.s.
52.525 MHz	1.3:1
146.00 MHz	1.8:1
Ground Plane	
146.00 MHz	1.65:1

TRIPLE RANGE SWR BRIDGE

Of very recent construction is a SWR bridge which enables readings from each of the antenna systems just described to be metered without the need to change over coax leads. This of necessity will have to be written up at a later date. Briefly, it comprises 3 sensing elements into which 3 transmitter outputs are fed which in turn go to the 3 antenna mountings. The 2 meters "forward" and "reverse" are switched to suit the antenna being monitored with one common sensitivity control. So far the unit appears to be very satisfactory. More of this later. ■

An Open Letter

To all members of our International Amateur Radio Community

De: Jan Gould WA6YQW/KH5

The story, however garbled, of our plane crash landing on Palmyra Island, 5 January 1980, has been told and retold these past months. The miracle that nine of us came through it alive cannot be over-emphasized, although I was critically injured and a brilliant neurosurgeon later sustained serious injuries to his "operating" hand in the course of winding down the DXpedition.

What hasn't been made public, until now, are my personal words of thanks and deep gratitude to the 4,000+ Amateur Radio operators throughout the world who came forward with cards, letters, flowers, cablegrams and TX calls. Also sent were financial contributions to the "gift fund" established in trust for me through the kindness and concern of Norm Friedman W6ORD. (The proceeds of that fund are now replacing and repairing much of my damaged or destroyed gear, thanks to some more pretty wonderful and generous hams.)

Needless to say, each of the people on that plane was victimized by the cruelest type of shock and terror, if not actual physical injury. Each deserve acknowledgement for his particular personal courage, however it was manifested.

My own trip through hell was, first, the horror of being trapped and crushed in the seat of the aircraft, smelling gasoline all around, being fully aware the rest of "my guys" were frantically trying to free me . . . Dr. Dave Gardner doing his best to relieve my pain with medication . . . brown skin natives carrying me several miles, on a makeshift litter, to an old copra shed . . . the hours of waiting for the Coast Guard C130 rescue plane to arrive . . . the 1,100 mile flight back to Hickam Field and the final lap, by military ambulance, to Tripler Army Hospital.

The crash landing occurred about 7.00 a.m. local time and the ordeal in the emergency room of Tripler didn't begin until nearly 9.00 p.m. that night . . . the beginning of weeks of pain, fright, despair and the inevitable, "Why me?".

But another "beginning" had begun . . . the realization hundreds of people, all over the world, were praying for me, wishing me well, reaching out with strength and moral support that only a tragedy such as had been experienced could have demonstrated. I'm unable to touch each of you or to embrace you and tell you of the thanks and gratitude I hold dearly for the important role all of you have played in my life.

When I hit bottom, the massive community of amateurs reached out, took me by the hand and started pulling me up. You gave me hope and encouragement when I was thousands of miles away from home, family and friends and could see no hope . . . only a long, dark tunnel, wracked with pain and fear. Hams around the world began turning lights on in that abyss with their messages of love, friendship and involvement. The spark caught and there was suddenly an end in sight.

To each and every one of you who held your hand and heart out to me, my deepest gratitude and love, and the most sincere thanks from my family . . . none of whom are amateurs and who were totally amazed at the scope of the response from my amateur family throughout the world.

It's still quite a long walk to reach the end of that tunnel, but I'm on my way. With the continued good wishes and prayers from the "new world" I've just been introduced to — the braces, good doctors, a full and happy heart and, most of all, your concern and kindness — it won't seem like such a long trip after all.

From the bottom of my heart, warmest 73, 88, 33, and God bless you and those you love.

There's no other way of spelling THANK YOU!!

Jan KA6YQW. ■

QSP

ANTENNA GAIN

An article in April 1980 CQ by W8FX on antennas contains a table of selected antenna typical gain figures. The dB gain over a half-wave dipole for a 3 element yagi is given as 8, whilst that for a 3 element quad is given as 10, the same as for a 4 element yagi. The 5/8 wavelength vertical is given as 1.6 and for a 0.64 wavelength vertical it is 2.2. A 2 element yagi rates 5.0 as against 7.0 for a 2 element quad. A VHF colinear mobile antenna is rated at 3.4, whilst a phased VHF 5/8 quarter-wave 5/8 wavelength vertical is 6.0 and a similar vertical with 5/8 spacing rates 7.0. A rhombic with 5 wavelength legs is rated at 12, the same as a 4 element quad, a 10 element VHF yagi and a log periodic (10 to 14). A 44 element VHF quad array is rated at 17.1. At the other end of the scale a ¼ wave ground-plane vertical is given as —1.8 and the isotropic radiator as —2.1. ■

BUYING OR SELLING GEAR?

HAMADS

MAKE IT HAPPEN FAST

Delta-Yagi — The Answer?

D A. Howison VK2VPN
P.O. Box 306, Charlestown, 2290

Have you ever wondered what antenna you are going to use as a Novice for 10-15m? Prior to receiving my licence I spent weeks constructing a 10-15m Duo-Band 7-element interlaced Yagi only to be disappointed by its performance on 10m. It appears that the 10m elements suffered severe interaction from the 15m elements, thus killing its performance.

Dejected, I pondered on trapped beams (didn't like the idea of traps), duo-band and cubical quads (didn't really suit my location for mounting reasons) and multi-band dipoles (yuk, who wants to run wires when you can have directional antennas?). There are of course mono-band Yagis but I didn't have enough room or masts to do that either as the yard already contains a 10 m groundplane, 80m dipole and the existing beam

Then I remembered seeing a friend's aeria, a 2 element 10m **delta loop quad** and I thought "Well, why wouldn't it work mounted above a mono-band Yagi?" The duo-band Yagi I converted to a mono-band 15m 4 element Yagi and proceeded to work out how to mount a 2 element 10m delta loop on top using the same boom for both antennas. The formulas for the element are (feet and MHz):—

$$\text{Reflector} = \frac{1030}{\text{Freq.}},$$

$$\text{Radiator} = \frac{1005}{\text{Freq}} \text{ and}$$

$$\text{Director(s) if required} = \frac{975}{\text{Freq}}.$$

I used a spacing of 0.17 wavelength being claimed as optimum forward gain spacing for quads. Each side of the triangle in the loop is 1/3 wavelength. The vertical sides I constructed from telescoping aluminium tubing ¾ in. diameter to 5/8 in diameter to ½ in. diameter at the top

Across the top I stretched a length of aluminium welding wire, but any wire could be used The bottom bracket was manufactured from a 24 in. long piece of aluminium flat bar 1¼ in wide and ¼ in. thick. It was then bent into a "Vee" form with a 4 in. flat at the bottom and a 75° inclusive angle (this angle allows for the tensioning of the top wire) This bracket was then drilled to suit a muffler type clamp I used a 2 in diameter boom and thus at 2 in. muffler clamp, but change this to suit whatever boom you are using.

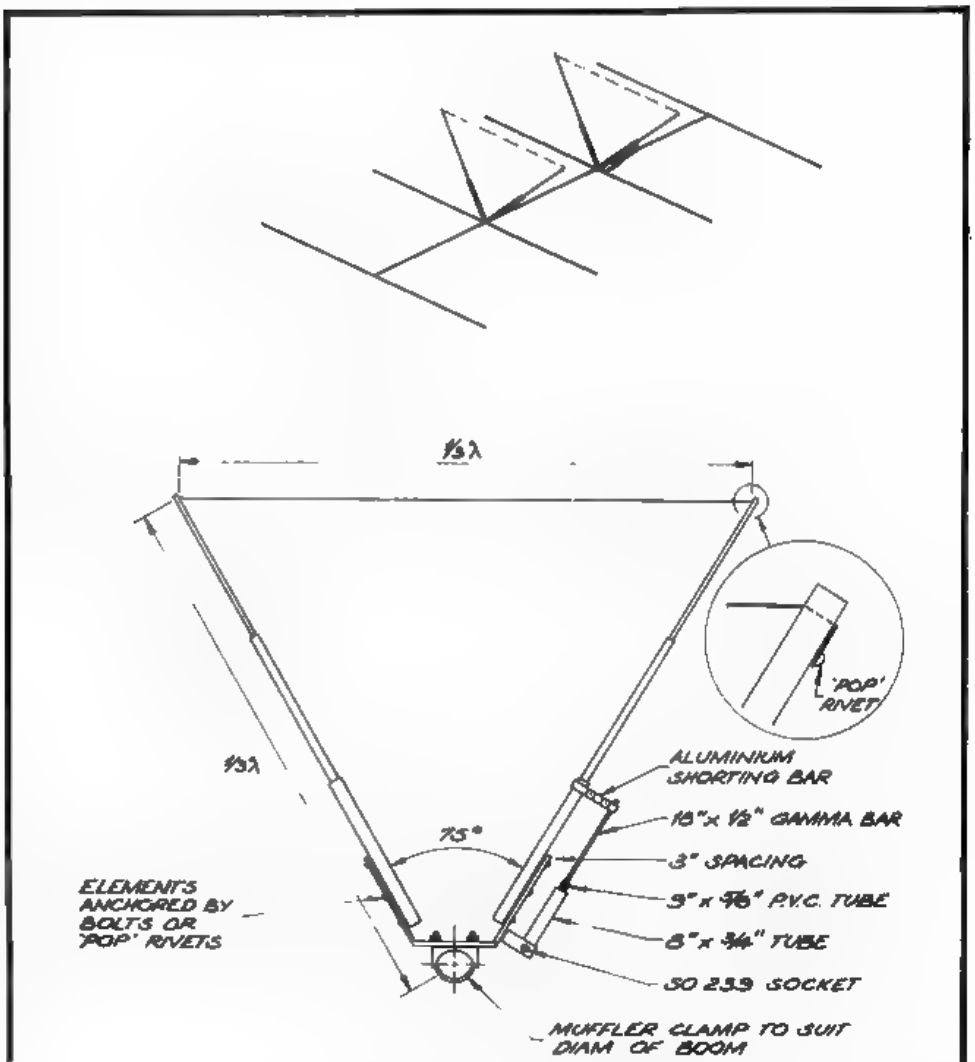


FIGURE 1: Details of delta loop radiator.

The gamma match system was used to match 50 ohm coax to the antenna and this was constructed using ¾ in. diameter aluminium tube with 5/8 in. diameter PVC plastic tube as the dielectric and a piece of ½ in. diameter aluminium tube for the inner rod. This system was then spaced out 3 in. from the element and mated to a SO-239-PL259 type connector The gamma match is adjusted to give minimum VSWR at formulated frequency.

Now you should be ready to mount the array on your tower and work all the beaut DX on 10 and 15m

I have since converted my array to four elements and am very pleased with its performance. There does not appear to be any interaction between the delta quad and the Yagi.

My quad boasts a F/B ratio of 25 dB and F/S ratio of 55 dB.

We have tried using a 10m 4 element Yagi with a 2 element 15m delta quad on top and this also works very well.

I wish you all the success that I've had with the Delta Yagi on DX. ■

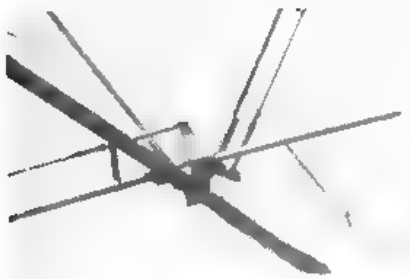
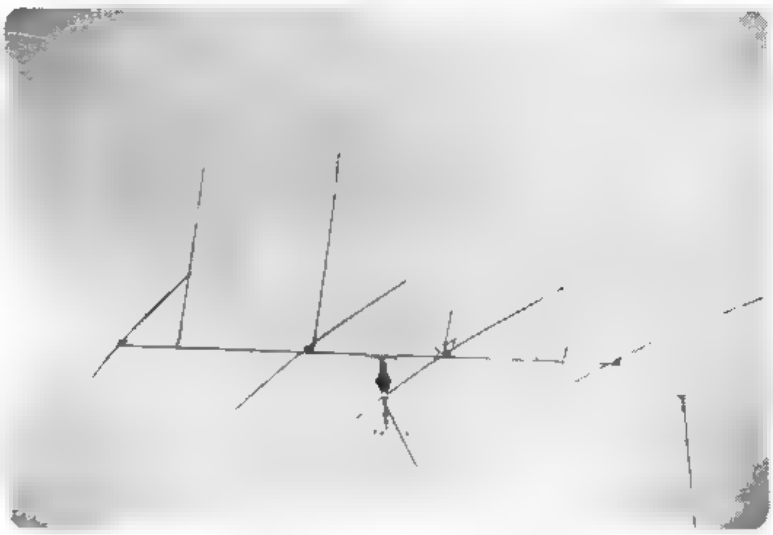


PHOTO 1 (above). Close-up of yagi and delta loop element connections with gamma match.

PHOTO 2 (below): The completed delta yagi mounted on a light-duty mast with rotator.



Teletext in the U.K.

Ted Trickey G4DCX

The Teletext system makes use of two unused lines in each 625 line frame to transmit data which can be used to construct up to 24 lines of 40 characters.

To view a particular page, the number is called a keypad, the keys are frequently incorporated in the normal ultrasonic remote controller used to control channel, colour and other parameters.

Using this method, up to seven hundred pages are available from each TV channel. Pages may also have many sub pages.

The data received by the teletext receiver includes control characters which are used to control the colour, text or normal picture display (or both), pulsing characteristics of the display and automatic time alarm facility.

Simple graphic symbols can also be displayed. Other characters control hidden data which can be revealed when ordered from the touch pad (children's quiz games and answers). There is also a facility for displaying half screen thereby doubling the size of the characters.

As illustrated, there are three or four pages on amateur radio. These are frequently updated with news and items of interest to radio amateurs and are very much appreciated.

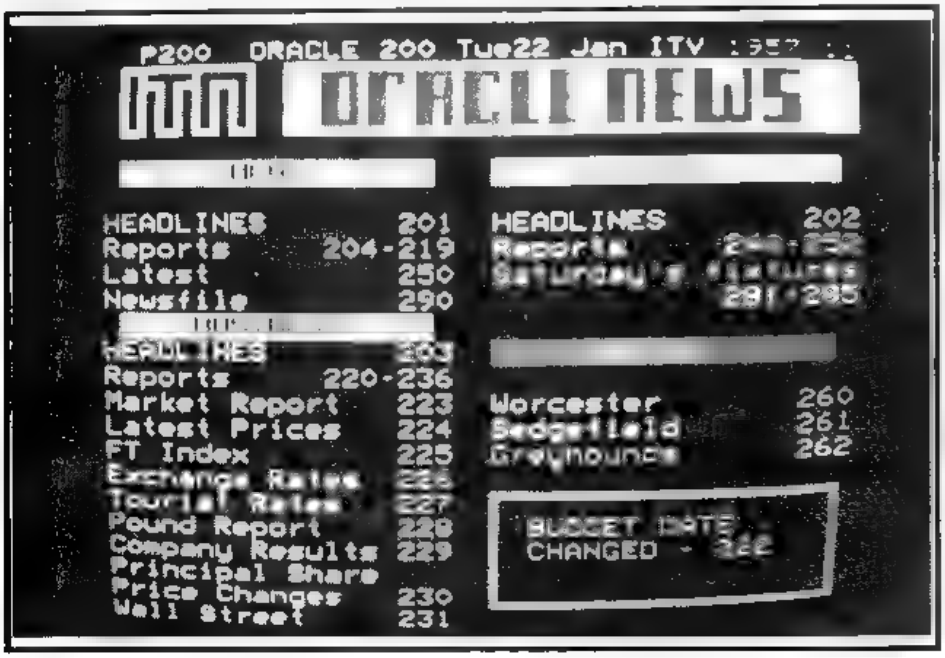
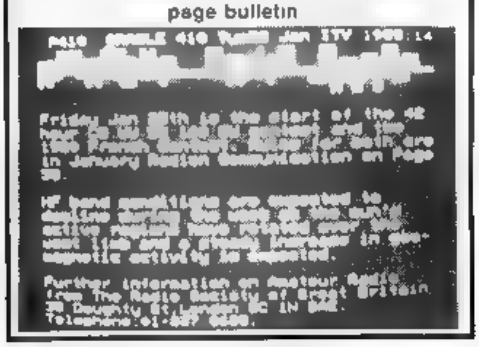


PHOTO 1 (left) shows a sample of amateur radio content, while PHOTO 2 (below) shows an index from the ITV Network 900 page bulletin



HEARD ANY GOOD "RUMOURS" LATELY?
TELL A.R. ABOUT THEM

WICEN Exercise for North-Western Zone

M B. Syme VK3VUA
Box 91, Irymple 3498

On Saturday June 14th, a party of seven vehicles left in convoy from Mildura to conduct a W CEN exercise at Lake Tyrell near Sea Lake in north-west Victor a The object of the exercise was to provide emergency communicat on fac lities for the Ma lee Rally conducted annually at that location by the Light Car Club of Australia, Bend go Branch This was to be the second year of partic pat on for the North-Western Zone WICEN Group, who have also provided emergency communications each Easter for the Ski Marathon on the Murray River for the past three years.

All were prepared for all eventualities, as the site could provide no creature comforts, not even water The weather was cold and bleak, so plenty of rugs were needed. The camping gear varied greatly — two modified Land Rovers, one campervan, several tents of various kinds, and even two caravans. On arrival at the site where control was to set up, all parties organised camp in a suitable spot with a communal campfire in the centre.

Before nightfall the mast with 2 metre skelton slot and 80 metre dipole was erected, and the control tent set up. Others present at the site included a CMF army transport unit also using the event as a communications exercise, PA van, police communications van and ambulance, as well as many race officials. Much rag-chewing went on round the fire that night

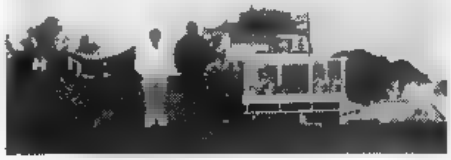
PHOTO 1 "Nerve centre" for the N/W Zone WICEN Exercise Pictured, bearing the cold, from l. to r. Marilyn VK3VUA, Peter VK3BEJ and Geoff VK3ACZ.

and some members retired VERY ate One atecomer rol ed into camp at 2 a.m., having woken some of the crew by shouting for guidance on 2 metres! (He'll remember to get t me off next time!)

Al were woken rudely at 5.30 a.m. by a great barrage of dustbin lids, courtesy of the Army! Great way to start a day wh ch rema ned bleak and cold throughout! By 7 a.m only the control personnel were left, the others having dispersed to the r checkpoints round the lake's perimeter Control was under the able leadersh p of Peter VK3BEJ, the local WICEN Co-ordinator

Sunday was one of constant activity, as all car numbers had to be noted and passed to control (a very good exercise in itself) and of course as the race proceeded the messages started to come in. All traffic regarding car numbers was handled on 2 metres, while all emergency message traffic was passed on 80 metres. The only interruptions on 2 metres came when Peter VK3BEJ went aloft in a plane with his hand-held 2 metre rig. It is probable that the breathlessness of his transmissions was largely proportional to the height above ground at which he was flying — maybe 100 feet! By 5 p.m. all cars

PHOTO 2: Above are pictured some of the happy participants in the exercise. From l. to r.: Graham VK3GZ, Peter VK3BEJ, Bob VK3YVT, Alf VK3VIV, Margaret VK3BVF (seated), Geoff VK3ACZ and Darren VK3VNR PHOTO 3 (below) shows the antenna installation with 80m dipole and skeleton slot array for 2 Mx.



were found and retrieved, and all concerned retired to the campfire for a meal and more rag-chewing. Much time was spent that evening by certain determined people trying to make ashtrays from small melted empty bottles — with no success

Monday was a repeat performance minus the rude awakening and with improved weather This time the motorbikes were

racing, and there were three accidents to cope with, one quite serious. As numbers were smaller at control on Monday, the whole afternoon was an excellent test for emergency message handling. Despite various problems, all messages were relayed accurately, and there were no equipment breakdowns (the only casualty was a certain 2 metre beam whose gamma match got broken en route Monday morning).

Everybody taking part agreed that the standard of operation had improved vastly since the previous year, and there are no lack of volunteers for the next time.

Thanks are due to all who helped make the weekend a success — Alf VK3VIV and Margaret, Bob VK3YVT, Bev and Bobby, Darren VK3VNR, Dave VK3YTY and Lee, George VK3YML, Graham VK3GZ and Margaret VK3BVF, Geoff VK3ACZ, Marilyn VK3VUA and Cathy Gordon VK3YOD, Greg VK3BRQ, Kester, Peter VK3BEJ and Barbara, Ron and Marlene — keep up the good work! ■

LISTENING AROUND

With Joe VK2NIM

There must be a jinx on my typewriter I think because in these last few minutes every time I try to start writing this page, the typewriter goes crazy, so let's hope I can get through this without too many "blues", so . . . testing . . . testing . . . the quick brown fox jumped over the lazy dawg . . . oh, heck there it goes again . . . who ever heard of a "dawg" anyway?

I've heard the old-timers say that eighty is the friendliest band, and in two years or so listening I tend to agree.

Every time I tell some distant contact that Buronga is my QTH, they tell me that they've never heard of the place, so I've found myself going through the monotonous routine of saying 'Well, look for Mildura in north-west Victoria and draw an imaginary line four kilometres north into NSW and there you'll find me on the NSW end of the bumpy Mildura bridge over the Murray. Well, that technique gives them a clue but I decided to go one better and obtained my official co-ordinates from the Wentworth Shire Council. And so here for the benefit of posterity and all and sundry that I work on 80 and 10, here they are. Be it known from henceforth that Buronga is located 34 degrees south latitude and 142 degrees east longitude". So there you have it, the mystery of where VK2NIM is located is solved. And I'm not the only one who now includes official longitude and latitude along with my QTH, for Bob VK3NHA has been heard doing the same. And for the benefit of the vast (?) listening audience, why doesn't everybody do it?

Now who are the most interesting people I've heard in recent times? Well, take for example Brian VK2NAI, with whom I used to speak when he was on duty at the Siding Springs optical telescopes near Coonabarabran, NSW. Brian has been overseas visiting Egypt and other places since I last worked him under his VK2NAI call, and, since coming back, he's now known as VK1DX. A few nights ago, I spoke to his dad, Lou, the former VK7NLJ, who is now VK7LJ in Hobart.

Was in touch recently with Keith VK5KH at Kapunda. Keith has been on the bands a long while. In 1954, he was secretary of the "Beef Steak and Burgundy Club" in Port Adelaide. I don't know what this has got to do with amateur radio, but I'm putting it in anyway because it shows where his interests lie. During World War Two he was in the RAAF at Drysdale in the north-west of Western Australia, and later at Gove in the Northern Territory, which Keith says was called after a Wing Commander Gove who was killed there. He was later at Berry Springs hospital after drinking lolly water at the Adelaide River Canteen (which I remember quite well from my own sojourn in the NT on active service). Keith described a raid on the Drysdale Mission station in which a Catholic priest and five aboriginals were killed. While at Drysdale Keith, although not of the same faith, played the organ in the Drysdale Mission church. In this raid "everything was decimated" Keith said. In another period he was at Cape Arnheim and Batchelor, then to New Guinea, and in 1944 he was with the RAAF at Mildura. I forgot to mention also that earlier on Keith was on Middleborough Island and Morotai Islands (where I was also at one time).

Another contact was with Alan VK2AIR of Seven Hills near Sydney. Alan is a very interesting bloke also, and in his trips around the world has marvelled at the stack of antennas atop of the Russian Embassy in Teheran. On the morning I spoke with Alan, a VK4 was heard to mention that he (the VK4) had heard some ZLs discussing "a shake" that had just occurred in New Zealand. It appears that the Shaky Islands quite often get the shakes and when they do its not always news. But VK2AIR says that he was once in Napier when an earthquake occurred.

Was very pleased recently to be able to speak on the 600 ohm line with Barry Theorodore VK3VST at Sunbury, who has just got his call and who lives near a friends of my CB days, John Canning. A sked was arranged for 10 p.m. Friday, 20th June, on 3620, and I was on time it appears that as SWLs, John and Barry have often listened to me in the early morning hours nattering away to perhaps Gordon VK5HM, Leo VK5GJ, Hugh VK5NIO, Steve VK4SE, or any of the many others who inhabit "80" during the wee morning hours. I was pleased to be able to welcome Barry to the bands and was more than pleased to be able to speak with John through Barry's facilities. John is now convinced that amateur radio is for him, and it is his intention to get his Novice ticket. Good work, John, and thanks again, Barry.

Reading the mail recently, I heard a VK5 who, at the age of 16, has got his full call, but having lost my notes I can't recall who it is. And another young fellow, David from Canberra, who is a friend of Brian VK1DX, got his full call straight off without going for the Novice. David's call is VK1DN, and both sat for the February exam. Gee, the bands will be getting so crowded soon that the sooner they give us that extra spectrum space the better.

I hear that over in VK6-land on 80 in the early morning hours they're getting miscellaneous types of interference from some of our northern neighbours. One VK6 was heard to say that these signals were a homogenous mixture that was both AM and FM and other types which he described as "wobbleygogs". How glad I am that I am not in VK6 when all that racket is on.

On Wednesday 18th June, at about 1 a.m. on 80, I worked a JA with a difference. I say he was a JA with a difference because he was aboard an LP gas tanker carting Bass Strait gas to JA-land. He was "Nob" JA6COM who was then maritime marine 100 miles south of Sydney. "Nob" comes from Nagoya, and told me that after this voyage he will be vacationing for three months and during this time will be sending cards to all the VKs that he has spoken with en route, and he'll be looking out for some of us on ten metres. "Nob's" ship picked up its cargo at Westernport, and while delayed there for 16 days due to industrial trouble, he stayed at the home of Geoff VK3NLG.

A favourite occupation of John VK5XT of Stirling is feeding honeyeaters and kookas. I enjoyed my recent conversation with John. He says he goes regularly to the local courthouse, so while he didn't specifically tell me his occupation, that could be a clue.

Another newcomer to the bands is Bart VK6NPM, in Perth. Bart was born in VK4, and has worked in several States. His first meeting with me was in our CB days and it's nice to know that he's among the "converted".

There's another VK6 who likes a drop of the bubbly, and when he's under the affluence of inkahol, has on more than one occasion made things pretty rugged for those trying to have a round-table QSO. In fact, the last occasion was so bad that others were forced to vacate the frequency because he very effectively blocked out the Perth station we were trying to hear, and he is nearer to us than the Perth station. Isn't it a pity there isn't some sort of .05 test for those who drink while operating. You did make it tough for us, mate, so why not wise up to yourself? ("Full" call seems appropriate in this case!)

73 until next time. ■

VHF-UHF

An expanding world

Eric Jamieson,* VK6LP

Forreston, S.A. 5233

VHF/UHF BEACONS

Freq.	Call Sign	Location
50.005	H44HIR	Honiara
50.055	ZL1UHF	Auckland
50.100	KH6EQ	Pear Harbour
50.105	KC4AAD	McMurdo, Antarctica
50.110	KH0AB	Saipan
50.144	KC6NI	Ponape, Caroline Is.
51.999	YJ8PV	Vanuata
52.200	VK8VF	Darwin
52.250	ZL2VHM	Palmerston North
52.300	VK6RTV	Perth
52.330	VK3RGG	Geelong
52.350	VK6RTU	Kalgoorlie
52.400	VK7RNT	Launceston
52.440	VK4RTL	Townsville
52.450	VK2WI	Sydney
52.500	JA2IGY	Mie
52.500	ZL2VHM	Palmerston North
52.510	ZL2MHF	Mt Climie
52.800	VK6RTW	Albany
52.900	VK6RTT	Carnarvon
53.000	VK5VF	Mt Lofty
144.010	VK2WI	Sydney
144.162	VK3RGI	Gipps and
144.400	VK4RTT	Mt. Mowbullan
144.475	VK1RTA	Canberra
144.500	VK6RTW	Albany
144.600	VK6RTT	Carnarvon
144.700	VK3RTG	Vermont
144.800	VK5VF	Mt. Lofty
144.900	VK7RTX	Ulverstone
146.000	VK6RTV	Perth
147.400	VK2RCW	Sydney
432.400	VK4RBB	Brisbane

As advised last month the beacon list this time has been pruned somewhat with the removal of the overseas beacons except for the Pacific area. The chances now for most VK stations to work anything of importance over such long distances are fast fading with the passage of Cycle 21, but I am sure there will be occasions during the next 12 months or so when some contacts will be made from the Pacific area eventually leading to increased Es activity as the sunspot cycle moves towards its lowest point, with a consequent improvement in long distance 2 metre propagation via Es.

The **VK5KK** beacon on **52.150** can be heard occasionally, whilst I have been receiving reports of a **VK3OT** beacon on **52.435** being heard in VK5 with some consistency although rather weak, at the same time the **Geelong** beacon on **52.330** is being heard at S1.

I note also from the SERG Newsletter that the Mt Gambier beacon project is being looked at with a view to trying to get the beacon on the air before the end of the year. If this comes about it will be a great help to both VK5 and VK3 operators being situated about halfway between Adelaide and Melbourne.

SIX METRES

This band to date has been somewhat quieter than expected, although some watery CW peaking north was heard on 52.050 on 11-9 at 1030Z. On 11-9 **Gerry VK5AGM** worked 5 JAs on CW 5 x 1 around 1005Z, areas worked being JA1 and JR2. On 10-9 JAs were heard working into VK6.

Probably the best contact out of VK5 for the month was that of **Peter VK5ZPW,** who worked **C21NI** on **14-9** at 2319Z at 5 x 9 both ways. Contact lasted for three minutes only. **Arki C21NI** was part of a DXpedition and also worked two VK2s and some ZLs. QSLs are via **JA1UT.** Good work, Peter, shows it still pays to be watching the band.

Incidentally, **Peter VK5ZPW,** from his prime location near Angaston, also worked into Broken Hill recently, working **VK2ZI** first on channel 40, then on 144.100 5 x 9, also worked **VK2BY** and **VK2ADJ,** who incidentally have 432 MHz capability as well. Peter also worked VK2ZI on 6 metres at 5 x 4 both ways.

Gerry VK5AGM also advises W6 were hearing **ZL** TV on 27-9, and that Bill **W6HTH/KH6,** formerly HL9WI, has been working into a number of the Pacific call areas, and is anxious to work as many areas as possible, including VK.

Tony VK6BV has written to advise his antenna system is once again operational, and on 6 metres has a KLM type yagi up 16 metres and a repaired 16 element on 2 metres. Both are working well, with the new 8 element on six going better than his former home-brew 6 element.

Dick 3D2CM in Suva generally operates on **50.110 MHz** and looks towards ZL and VK for contacts from around 0500Z. So far only ZL TV has been heard. Perhaps as Es improves we might be able to work him, though our 2 MHz split won't help.

SIX METRES FROM VK6

Graham VK6RO wrote to me again as promised following his trip to the northern part of VK6 to work whatever was available on 6 metres. Taking his IC502 plus 25 watt PA and a ¼ wave gutter mounted whip on the car, plus another IC502 for listening on 50 MHz, he set out and worked **211 JAs, KG6DX** and three VK6 stations from a total of 15 openings. As an indication that DX doesn't really die in the north, here is what he worked.

Carnarvon 1-9 1250Z 2 JAs 5 x 1. Port Sampson 3-9 0925 to 1025Z 33 JAs, all call areas except JA8. Signals to 40 dB over 9 both ways! 1146 to 1255Z 26 JAs, in areas 1, 2, 3, 4, 6 and 9, 5 x 9 both ways, total 59 JAs for day. Dampier 4-9 1232 to 1310Z 8 JAs 5 x 8. Port Hedland 5-9 1135 to 1300Z 8 JAs 5 x 9. Broome 6-9 1020 to 1328Z 23 JAs 5 x 9. Broome 7-9 funny propagation, no JAs until 1107Z but at 1010Z heard Perth beacon 5 x 9. Called CQ Perth and got **VK6XW Albany!** Then VK6WD Perth, followed by VK6XY Albany at 5 x 9 plus 20 dB! VK6WD went on to work JAs and Graham was able to hear both ends of the contacts. The **VK6RO to VK6XW** contact may constitute a new VK6 internal record. Graham did not know whether VK6ZFQ on Koolan Is. worked him. Same day, between 1107 and 1313Z, worked 24 JAs to 5 x 9.

Broome 8-9 no JAs until 1155Z, but at 1122Z whilst listening on 52.050 heard **KG6DX** call CQ, and had a 30 minute QSO with Joe. Worked 18 JAs to 5 x 6 between 1155 and 1309Z. Port Hed and 9-9 5 JAs 1213 to 1335Z. 10-9 nothing except TV carrier on 49.475. Dampier 11-9 1052 to 1332 worked 56 JAs 5 x 9, worked 200th JA. Dampier 12-9 nothing all day! Carnarvon 13-9 only TV. Carnarvon 14-9 0952 to 1013Z 4 JAs 5 x 6. Geraldton 15-9 0851 to 08522Z 2 JAs 5 x 5.

Graham reports the TV carrier on 49.750 was heard every day at up to 5 x 9 even with the IC502 hand-held! Did not hear one JA8. Despite being early September the night time TEP was there.

It may be well worth observing that the first JAs at Carnarvon on 1-9 were weak at 1250Z. A little higher up 2 days later the JAs were very strong and started at 0925Z, much earlier. As Graham progressed further north the main JA signals were being heard from 1100 to 1300Z, and as he came back down the coast again the times gradually became earlier until his last day at Geraldton they started at 0851 and finished 0855Z and 2 only worked. Not only did the numbers generally diminish as he came back, but the times were earlier.

NEWS FROM NORTH QUEENSLAND

We now swing right across the Continent to hear from Ted VK4YG at Freshwater reporting on the Cairns and North Queensland news.

6-8 **Colin P29ZEV/P** worked into the Cairns repeater VK4RCA from Mt. Clarence which is 120 miles east of Port Moresby. Time 0700Z. Distance 439 nautical miles. altitude 5300 ft. a.s.l. Many contacts with locals.

15-8 **VK9ZG, Graham** on **Willis Island,** a weather station 250 N miles from the repeater, had many QSOs with locals. 0755Z and 250 N miles. Altitude sea level. Contacts continued for several days, and intermittent according to weather conditions. VK9ZG also contacted Ken VK4KT in Townsville direct on 2 metres SSB over a distance of **290 N miles.**

20-8 **Ken VK4KT** at Townsville worked 2 ways with **Ian VK4AFC** in Cairns on 432.100 MHz SSB, at 1220Z. VK4KT was running 10 watts with an 8/8 slot fed array, and VK4AFC 10 watts and 7 element yagi. Distance **180 N miles,** which is a good effort for North Queensland coastline, and a first time contact. (Good work, chaps, may it be the forerunner of many more contacts.—5LP.)

29-8 The Cairns Amateur Radio Club's repeater VK4RCA changed its frequency on this date to channel **6950**, i.e. 146.350 in and 146.950 out. Contact with VK9ZG on Willis Island was made at about 0880Z that evening on the new frequency. **Intending visitors please note the change in your books.**

Thanks for writing, Ted, and I note you now have a 6 element on six metres, so we should hear you well this summer.

It is certainly pleasing to note the workings going on in the north of Queensland on 144 and 432 MHz, in an area supposedly unable to support such activity a few years ago.

NATIONAL VHF FIELD DAY WEEKEND

As reported previously I give my full support to the proposed National VHF Field Day Weekend being sponsored by the Geelong Amateur Radio Club to be run in conjunction with the first weekend of the Ross Hull Memorial Contest. This will probably make the starting time the weekend of 6th and 7th December, which also is a VHF Field Day Weekend in New Zealand, so this may help to improve the interest in all areas.

Here are the details of the National VHF Field Day Weekend.

AIM

The Field Day Weekend is being conducted by the Geelong Amateur Radio Club in an effort to encourage VHF/UHF usage and participation in the Ross Hull Contest, as well as filling the needs for a nationally co-ordinated VHF Field Day Weekend.

CONTEST PERIOD

Any continuous 24 hour period within the first 48 hours of the Ross Hull Contest.

RULES

All Ross Hull Contest rules apply, plus/except the following.

Only entries from portable stations will be accepted, however check logs from home stations will be welcome.

A station is deemed portable when it is operated at least 2 km from the home QTH.

No equipment, including antennae, may be set up more than 24 hours prior to the start of the contest.

Power may be derived from any source available.

A scoring contact may be made with the same station on the same band repeatedly provided at least 4 hours elapse between the contacts.

SCORING

Scoring as per Ross Hull Contest rules.

ENTRIES

Each entry must contain a front sheet giving details of station including location and total score claimed. Plus a photocopy of the log. All entries will be acknowledged and certificates will be awarded to the overall winner, plus the highest score in each call area.

All entries "Contest Manager", Geelong Amateur Radio Club, PO Box 520, Geelong 3220.

About the only thing the sheet of rules doesn't tell us is the closing date for entries for the Field Day Weekend. Based upon the usual one month after the close of the contest, this could means the 7th January, 1981. If the closing date for the Ross Hull Contest entries is observed then it will be much later. Might I suggest participants don't tarry too long and get the results in by 7th January, in this way the Geelong Manager will be able to get the results out a lot earlier than if you wait for the later date. Whatever the date is really doesn't matter, but please put in your log, if you put it off too long you probably won't send it in anyway!

EME NEWS

I note from **"Break In"** that **Graham ZL3AAD**, whom I had the pleasure of meeting in New Zealand recently, has been doing very well with his 432 MHz EME activity. To May 18 he had made **39** contacts for **11** countries, and requires only South America for WAC. He believes his contact with **F9FT** on **18-5** is a possible new world record distance of **11,775 miles or 18,951 km.**

He reported that on 17-5 the QRM from USA and JA stations was so bad he could not get in — signals were S3-4 above the noise with **K3NSS** and **JA6ZCD** creating havoc with their strong signals. **K3NSS** uses an **80 foot dish** and **2 kw** at feed, **JA6ZCD** has a **30 foot dish** and **1 kw** feed.

Graham reports it is hard working out in the East as noise from the city of Christchurch produces almost 9 dB extra until he gets above 15 degrees elevation. Graham notes this is one of the problems with extremely low noise GaAs FET pre-amps in that the noise figure deteriorates when the antenna is horizontal. To use these for terrestrial work produces no improvement in the signal due to ground temperature. They do, however, produce 13 dB of sun noise when elevated.

From "The Propagator" comes an EME report to say the 1296 MHz disc feed was installed in the new six foot diameter dish. The 1296 MHz preamp was mounted directly at the feed with a short length of coax to the converter giving an overall receiver noise figure of approximately 3.5 dB.

4 dB of sun noise was obtained, with quite a clean radiation pattern.

A special EME test for 1296 MHz is being organised by SK2GJ in Sweden for September/October. They will have the use of a 100 foot diameter dish and they are hoping that signals may be received by stations having an antenna with gain equivalent to only a five foot diameter dish.

VK2BYX in Moree has started to construct a 432 MHz EME system. He will initially use an antenna array of four long yagis.

JOTTINGS FROM HERE AND THERE

The first UK six metre beacon, **GB3SIX**, was due to start up on 18-5-80. It can only be operated between **0100** and **0830Z** due to TV stations occupying the band at other times.

It is noted with regret the problems the repeaters are having in London with deliberate interference, bad language and pirates. A change of call sign, and the opening up of three additional repeaters really only helped to spread the abuse.

"Short Wave Magazine" reports that during the excellent conditions last May 10-11, **G4ERG** in Hull stened to an hilarious "how' around" between an English and Norwegian repeater. This is possible because the outputs of the RB relays are on the inputs of the IARU Region 1 RU repeaters. Once triggered off they will continue to access one another until propagation no longer sustains the possibility! So much for non-standard repeater splits!

"Radio Communication" reports that **John Baker GW3MHW**, from Wales, last winter had made over **400** crossband contacts from 28.885 to 50 MHz, working all USA call areas on the way.

It seems the Northern Hemisphere is not content to settle for TEP and F2 contacts on 50 MHz. A report comes to hand of what is believed to be multi-hop Es when at 2230Z on 15-7-80 the Gibraltar 50 MHz beacon ZB2VHF in USA at 5 x 9 plus in the W1 call area. A telephone call from **K1DH** to the beacon keeper **ZB2BL** brought him on the air and he worked K1DH, W1QXX, WB1FUB, WA1UQC, K2MUB and N3AH. Nothing was heard in USA of the GB3SIX beacon or from **EI2W**, who also came on the air after receiving a telephone call.

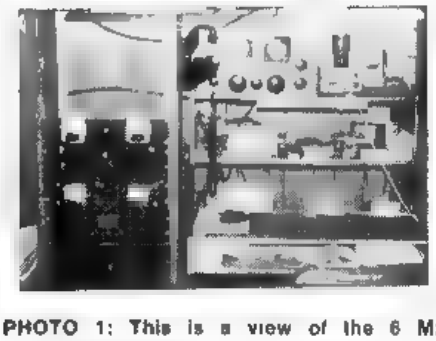


PHOTO 1: This is a view of the 6 Mx operating position of Gary W6JX, a renowned 6m DX operator.

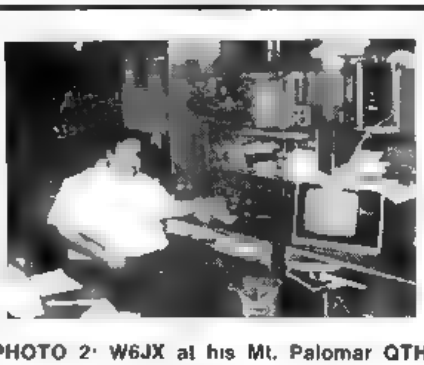


PHOTO 2: W6JX at his Mt. Palomar QTH. Photos by Lionel VK3NM

VK2AC in Sydney has a newly completed crystal controlled transmitter operating on **10 GHz.** Output is at least **25 mW.** The design of the equipment is such that it will allow 'narrow band' communication techniques to be used to obtain quite an improvement in capability over the relatively wide-band Gunn diode oscillators at present used on the 3 cm band.

"The Propagator" reports the Goroka (P29) amateurs are setting up a **10 metre beacon,** as well as a **2 metre repeater,** on top of a 14,000 foot mountain. QRP tests have been carried out from the site and the Cairns repeater has been accessed. The permanent repeater will have an output power of **50 watts,** so it looks like the repeater should be a great asset to VK4 operators, they may be able to work Japan through it!

Meteor showers coming up soon which may enhance your 2 metre possibilities: **TAURIDS — 26-10 to 16-11,** peaking **8-11. LEONIDS — 15-11 to 19-11,** peaking **17-11. GEMINIDS — 9-12 to 14-12,** peaking **14-12. URSIDS — 17-12 to 24-12,** peaking **22-12.**

Note in October 1947 QST 'World Above 50 Mc' reference to the 50 Mc record passing the 5000 mile mark with the contact between Clarry VK5KL, then at Darwin, and W7ACS/KH6 on 25-8-47 for a distance of 5350 miles. That record was to stand for a long time. Clarry used a pair of 834s in the 100 watt transmitter to a coaxial fed 3 element beam. Interesting.

I haven't received any feedback yet in regard to the suggested Locator Squares method of determining your geographical position. If you have any comments what about writing a few lines.

HINT FOR THE MONTH

How many times have you looked at that new shiny piece of aluminium tubing bought to be used as the boom of a VHF yagi and wondered how best you could drill the holes in it for the various elements and finish up with everything in line?

If you are fortunate enough to have two pieces of tubing the same size and length your job will be easy. Lay the two pieces side by side on a flat floor, and tie them together every metre or so with masking tape, making sure they can't move and lie flat on the floor when finished.

Select a fine grained file with straight edges, or the back of a hacksaw blade and, holding the implement firmly, place it firmly on top of the two tubes, and draw the implement down the full length of the tubing. This will score a line down each tube, so now you have two tubes marked, one for now and one for when the antenna is blown down at some later date! Centre punch where you want to drill the holes.

You can buy a device for a few dollars which can be attached to an electric drill which will ensure the bit when drilled through the tubing will come out square on the other side (in alignment that is, not a square hole!). Hardware stores have the holes drilled it won't take long to finish the construction job, with everything in line.

ENDING

News for the September period has been rather scarce, hopefully things will improve for October. I hope many of you will make an effort to go out on the National Field Day Weekend in December, start looking over your gear now. With the opportunity of using mains power now this should give more operators a reason for going out.

Closing with the thought for the month: **"How a man plays the game shows something of his character; how he loses shows all of it."**

73. The Voice in the Hills. ■

NOVICE NOTES

Edited by Ron Cook VK3AFW

Last month I posed two questions; you have discovered the answers I hope, but just in case you have not, here they are.

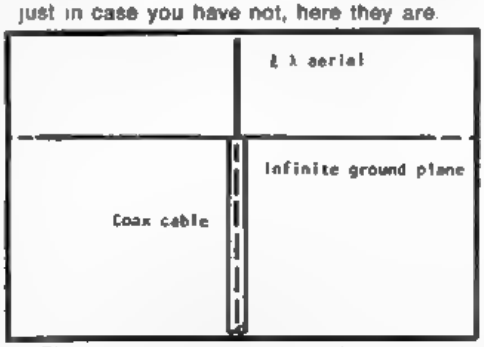
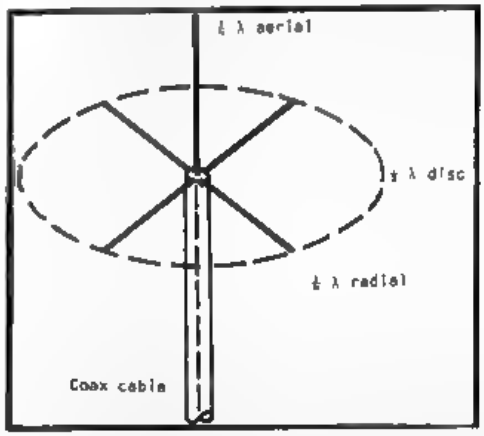


Fig. 1 shows a vertical aerial fed with coax cable and mounted over an infinite ground plane of very good conductivity. For convenience we will assume that the aerial is ¼ wavelength long but this is not critical. The feed resistance is 36 ohms or so, giving a VSWR of 50/36 or 1.4 : 1 in a 50 ohm line.

Current from the transmitter flows up the coax and out along both the antenna and ground plane. No current can flow back down the outside of the coax because the ground plane extends to infinity in all directions. If the ground plane were removed then current would flow down the outside of the coax. As the coax is likely to be several wavelengths long it will act like a long wire and radiate power in the direction its length. This is likely to mean considerable power radiated straight up. Even for moon-bounce work this is not desirable! Also the feed impedance will be different and the VSWR will be different. Murphy says that it will be a lot higher. And another thing that will happen is that RF will appear back in the shack causing RF feedback or RF burns to the lips from a "hot" microphone. Clearly RF flowing down the outside of the coax is to be avoided. Then again an infinite ground plane is expensive and may disturb the neighbours.

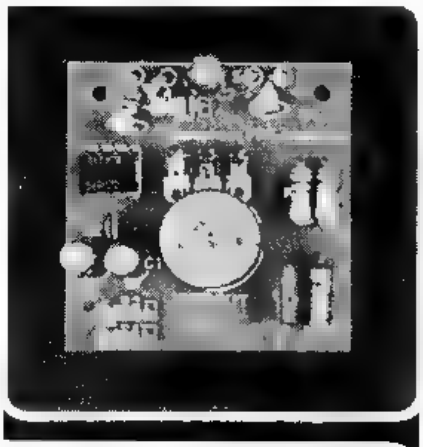
Fortunately we can reduce the ground plane in size to a disc a ½ wavelength in diameter. This is a resonant size and acts like a parallel tuned circuit choking off any RF current that tries to flow down the outside of the coax. Because of its symmetry there is no radiation from this disc. Any current flowing out from the centre produces a field but this is cancelled by the effect of an equal current flowing away in an exactly opposite direction. Thus we have only a vertically polarised signal from the aerial itself. The impedance of the aerial is the same as for the infinite ground plane, so we still have an acceptable VSWR.

Quarter wavelength discs have been used at 10 GHz but on 21 MHz they are a bit of a nuisance to build. Fortunately we can cut away most of the disc, leaving only four symmetric ¼ wavelength radial rods as shown in Fig. 2. The system works as well as the disc.



Bending the radials down will raise the feed impedance and reduce the VSWR. Alternatively the aerial can be lengthened by 25 per cent and a shorted coax stub about 0.15 wavelengths long connected to the base of the aerial. The inner is connected to the aerial and the braid to the radials and feed coax braid. The far end is shorted. Some pruning may be necessary. Don't forget to use the velocity factor of the line.

Now if we are erecting a ¼ wave vertical for 160 metres or even for 80 metres it is not practical to use 4 ¼ wavelength radials. For best operation (i.e.



JK02 Microphone Pre-amplifier
The JK02 is specially designed to amplify and control the weak signals from a dynamic microphone so that it can be used with a normal amplifier. For example, if you wish to build a low power public address (PA) system you can use a dynamic mike with the JK02 and a JK01. It has lots of applications with walkie-talkies, tape recorders, dynamic pick-ups etc. Another easy-to-build IC project. Requires 9V DC supply

PHOTO 1

JK04 FM Tuner
Everybody wants to build a radio receiver the JK04 not only makes this possible, but gives you high quality results as well. Using two integrated circuits and specially wound coils all the problems are solved. The specially designed automatic frequency control (AFC) circuit gives spot-on tuning of stations. The frequency range is 87.5-108 MHz (extendable by + 10 MHz). Output to headphones or an amplifier such as the JK01

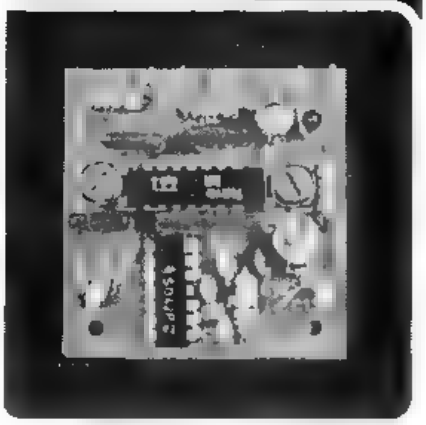
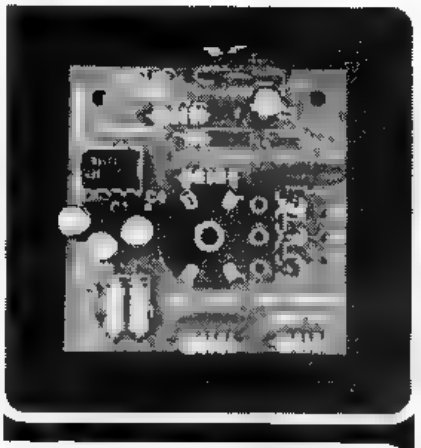


PHOTO 2



JK03 AF Signal Generator
A project which provides you with an indispensable piece of test gear. The signal is an integrated circuit oscillator circuit giving a sinusoidal output voltage variable between 20-20 000 Hz. Any frequency in this range can easily be selected by means of the pot on the front of the module so you have a very useful signal generator. This can be used for testing and fault finding on all types of audio equipment

PHOTO 3

freedom from interactions with the ground) the radials should be at least one and preferably many wavelengths above ground. The next best thing is to use the ground itself as an approximation to the infinite ground plane. Now unfortunately making a good low loss (low resistance) connection with the ground is not easy. A 2m long pipe may typically look like 20 ohms. Two pipes in parallel a meter or so apart may look like 14 ohms. Two 4m pipes may be better than 10 ohms.

Of course soil conditions are the most significant factor. Wet salty soil is best but causes the ground stakes to corrode. It has been found that extending the ground connections over a longer area is helpful. Also a long wire buried in even a shallow trench can be as good as a stake driven into the ground. It can be shown mathematically that a large area of contact gives a lower resistance than a small one.

So a radial system of not less than 20 inches 0.1 wavelength long buried 300 mm below the surface (or even a bit shallower) gives a good ground connection of the order of 0.1-5 ohms depending on the soil.

At some future date we will return to the design and construction of vertical aerials and also discuss measuring ground and earthing rod resistances.

Have you taken the plunge and built yourself a kit yet?

Photo 1, 2, 3 shows some simple and useful kits from the JOSTY KIT range sold by Vicom. The microphone pre-amp would be useful for some of the older transceivers. Two of the JR03 kits could be used as the basis of a two-tone generator for testing your rig. The JR04 could be used to update your stereo system. I am building another of these kits, a photographic timer. Each kit comes complete with all components and a booklet on how to build a kit as well as the circuit and layout diagram for the kit. Quite large systems can be built. Photo 4 shows an LED VU meter and photo 5 shows a conglomerate audio mixing console. (Photographs courtesy of Vicom.) A list of kits available can be obtained from Vicom.

Photos 6 to 10 inclusive are kits marketed by Dick Smith and are some of the vast range available. These are of particular interest to the Novice. They are all Australian designed and come complete with all parts, diagrams and a booklet "Guide to Kit Construction". (Photos courtesy Dick Smith.) I have built several of these kits, including the Morse Keyer and the Transistor Tester. They are easy to build, work well and have a good appearance.

From my experience with the Josty Kits it seems they too meet the same high standards.

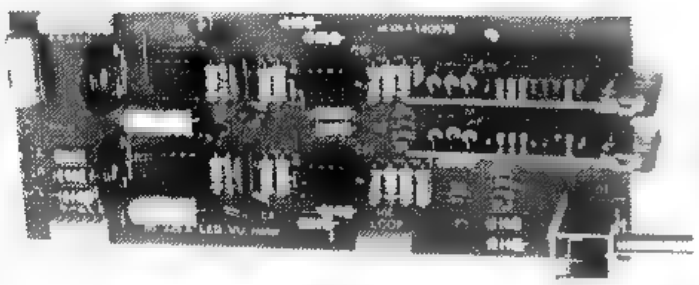


PHOTO 4

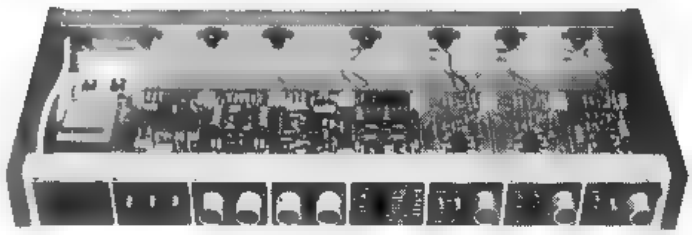


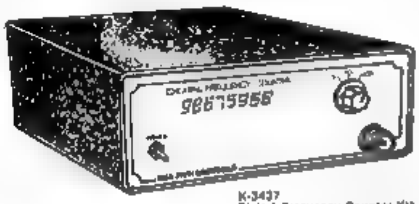
PHOTO 5

The full range of Dick Smith kits is given in the current catalogue.

Generally the overall cost of these kits is less than the cost of buying the components separately and certainly the satisfaction gained from completing a kit is worth more than mere money.

K-3472
Morse Code Trainer Kit
Ideal for the budding Novice.

PHOTO 6



K-3437
Digital Frequency Counter Kit
Up to 40MHz or 200MHz

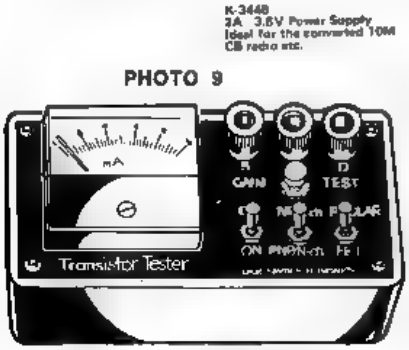
PHOTO 7

K-3470
Morse Keyer Kit
Complete with paddle

PHOTO 8

K-3448
3A 13.8V Power Supply
Ideal for the converted 10M
CB radio etc.

PHOTO 9



K-2062
Transistor Tester Kit
Tests Bipolars, FETS, SCRs,
& PUTs.

PHOTO 10

And now over to Peter VK3CIF for some interesting background on call signs.

AMATEUR CALL SIGNS

The ITU Regulations — Australia is a signatory and therefore adopts them — state that transmissions without identification or with false identification are prohibited (5331), all amateur stations shall have call signs from the international series allocated to each country as given in the Table of Allocation of Call Sign Series (5340), the 26 letters of the alphabet (excluding accented letters) as well as digits may be used to form call signs (5351), but for amateur stations combinations commencing with a digit when the second character is the letter O or I shall not be used (5354) and for amateur and experimental stations the call sign shall consist of one or two letters and a single digit followed by a group of not more than three letters (5375/6).

For other services, as a matter of interest, the call signs shall be (always remembering that the digits 0 and 1 shall not be used when following a letter) —

Land and fixed stations — 3 letters or 3 letters plus up to 3 digits.

Ship stations — 4 letters or 2 or 3 letters plus 4 digits in R/Telephony.

Aircraft stations — 5 letters.

Land Mobile stations — 4 letters plus 1 digit or for R/T stations 2 or 3 letters plus 4 digits.

Space service stations — 2 letters plus 2 or 3 digits.

EPIR stations — Morse letter B plus call sign of parent ship.

Aircraft survival stations — Parent aircraft call plus 1 digit.

AMATEUR CALL SIGN PREFIXES

The 1979 WIA Amateur Call Book, on page 20, lists the call sign series allocated internationally to each country. Mainly as the result of independence, new call sign series are allocated by the ITU as required. These appear in AR from time to time.

For practical purposes the call sign is split in two — the prefix and the suffix. The prefix refers to the country, the suffix refers to the individual station. Sometimes the prefix also includes an indication of a part of a country, e.g. VK5, VK6, etc.

Many years ago when there were fewer separate countries in the world, alphabetical prefixes were adequate. Some countries were allocated one or more series of one letter calls. Thus the USA took W, K, N, France had F, the United Kingdom G, Russia U, etc. The letter "Q" was, and is not, used to avoid confusion with the "Q" code. Other countries had to be satisfied with two letter call series, such as HS for Thailand. As more and more countries were granted independence, the two letter call series ran out. Digits and a letter were then used — as examples, 9M for Malaysia and then later on C2 for Nauru.

Thus the prefixes heard on the bands range from the simple W6, G3, F8 to HS1, 9M2, C22. Two or three characters. Very occasionally a fourth character (i.e. the first character of the suffix) designates some special location or purpose, such as FB8W for Crozet Is. as distinct from FB8X for Kerguelen Is. and VK3N for Novices and VK3Z for Limited calls, the prefixes remain as FB8 and VK3 however. Local country administrations themselves allocate the prefix to be used, within their ITU allotment/s, for radio services including amateurs in that country. As examples, the British Empire, as it then was, had the V allocation and this was also used for Dominions and Dependencies such as VE for Canada, VK for Australia, and so on. Australia also possesses independently obtained call signs, AXA to AXZ, in addition to VHA to VNZ and VZA to VZZ. In the very beginning of these series (late 1920s), Australian amateur prefixes could have been VH1 to 0 or VM1 to 0, but VK1 to 0 was chosen. Much the same applies to the more recently allocated series — C29 could have been used instead of C21 since Nauru has the C2A to C2Z series. This always follows the principle of one or two letters followed by a digit. Hence 2 character or 3 character prefixes for amateurs.

In day to day usage amateurs refer to a country by its shortest prefix — G for the UK, W for the USA, C2 for Nauru, VK for Australia, etc. For Malaysia 9M may be quite sufficient, because 9M8 refers to Sarawak and 9M2 for West Malaysia. To be consistent though, amateurs use C21 for Nauru, P29 for PNG, etc., because the second digit does not refer to anything beyond the amateur prefix in use.

AMATEUR CALL SIGN SUFFIXES

The call sign suffix identifies the individual station. The suffix consists of one, two or three letters — never digits. Thus we find ZS2A, VK7AA, VK7AAA. An occasional longer suffix has been known, such as IARU or ARTEK, but is very rare. As a general rule the call sign refers to the station and not to an operator.

ADDITIONS

For some countries a foreign visitor, when licensed, can retain his home call sign with the addition of the country prefix — thus VE8AA/SU. The QSL card from this station would be accepted as Egypt for awards purposes.

Other additions, which carry no special country status for awards, would include W6ABC/MM (Maritime Mobile anywhere on the high seas except territorial waters), G3AAA/P (portable) and F6AA/M (Mobile in France).

HISTORICAL

The present series of world prefixes began in the mid-1920s but specifically it arose out of the 1927 International Radio Telegraphic Conference in Washington. About three years prior to that Conference amateurs had begun to conform to a sys-

tem of prefixes which the Transatlantic contacts in 1923-24 made abundantly clear as essential Thus G was for Great Britain, N for the USA, ON for Belgium and, apparently, A for Australia. The "Listener In" Handbook of Australian Call Signs issued in about 1926 listed amateur stations as "2WI", "4WI", etc. By 1930 these had become "VK2WI", "VK4WI", etc (Wireless Weekly Call Sign Supplement). However, Australian amateurs were using the prefix "A" for some years prior to 1928.

From about 1910-11 amateur stations in Australia were required to be licensed as wireless experimental stations under the Wireless Telegraphy Act of 1905. A call book published in 1914 by the Wireless Institute of Victoria lists these stations. These call signs were 3 or 4 letters beginning with "X". New South Wales stations went from XAA to XIZ, Victoria XJA to XPZ (XPJ was the WIV station), Queensland XQA-XQZ, SA XVA-XVZ, WA XYA-XYZ and Tasmania XZA-XZZ 401 stations were in that call book. Re-licensing of amateurs after the First World War was greatly delayed and the previous "X" calls fell away in favour of 2WI, 4WI, etc.

Prior to about 1910-11 there was possibly little need for identification by call sign as the number of stations were very few and the range of each extremely limited. Probably "handles" sufficed.

NOTES

In phone operations it is easy to mistake letters such as B, C, D, P, T for example. Thus phonetics are used such as may be noted in paragraph 8.1 of the Handbook as recommended for general use. Many amateurs still use well known country or city names such as Z for Zanzibar, but this can be confusing to non-English-speaking contacts (e.g. "Spain" for "S" seems odd when the country is "Espania"). It is best to avoid using peculiar phonetics over the air (e.g. VK5 Bright Beautiful Kid).

Some people still want to write their call signs with a hyphen or punctuations — as examples VK1-AA, or VK1.A.A. This is of course not correct because the full call sign is an entity of its own. Capitals for call signs is the correct usage. The oblique stroke (or slash) is used in denoting some difference — e.g. W6ABC/MM, VK6AAA/3, etc.

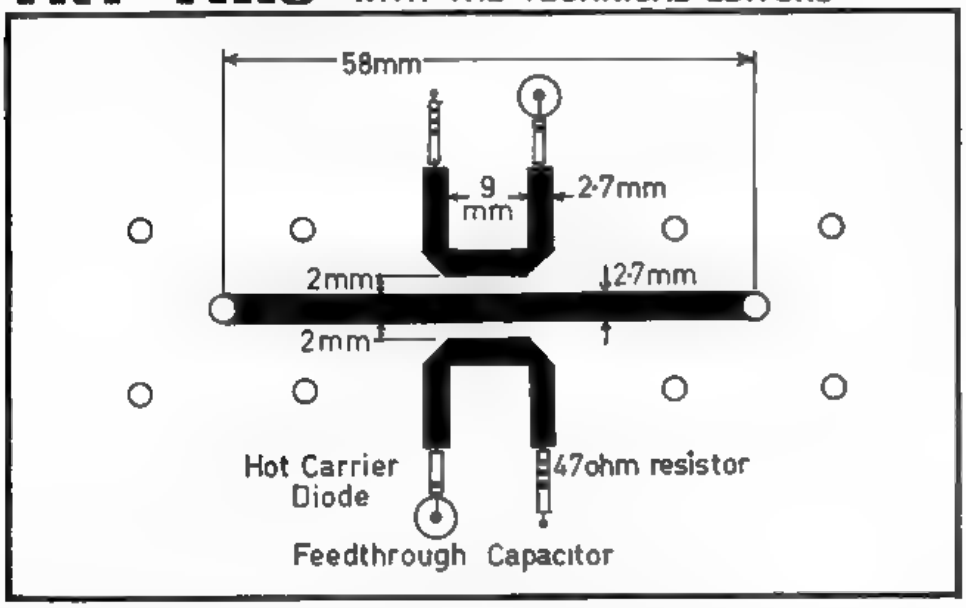
For award purposes (other than awards based on prefix calling) a country which becomes independent can only be claimed once. For example, if you already had a QSL card confirmed from ZD6 you cannot claim an additional credit for 7Q7 when the call sign prefix changed from 1-1-1964. Some "countries" became absorbed into larger groups as, for example, a CR8 of Portuguese Timor can be claimed as a country if the contact occurred prior to 15-9-1976, after that date the area became part of Indonesia and can only be claimed as Indonesia thereafter.

Finally, when talking about country prefixes which contain 2 digits it is normal practice to state the number as it is rather than using two separate numerals. For example, P29 would be spoken as "P twenty-nine" and not "P two nine".

Thanks, Peter. Next week we will discuss buying your first rig with particular emphasis on the second-hand market. 73. ■

TRY THIS WITH THE TECHNICAL EDITORS

Gil Sones VK3AUI



UHF REFLECTOMETER

Working on the UHF bands the need arises for an 'Aerial Has Fallen Off Indicator", otherwise known as an SWR Meter or Reflectometer.

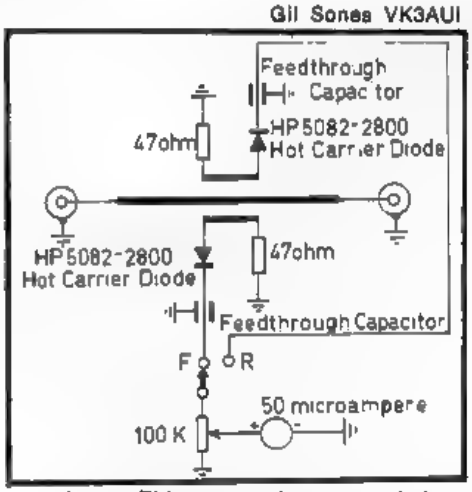
Not being a very competent sheet-metal worker or plumber, the usual masterpieces were viewed with some concern. However, a microstrip design based on a power indicator in the RSGB VHF/UHF manual was a definite possibility.

The design was a piece of double-sided fibreglass circuit board etched to provide a microstrip transmission line and a pair of sampling lines. The layout of this is shown in Fig. 1 with appropriate dimensions. This was laid out using a fine resist pen directly on to the circuit board before etching.

The connectors used are type N and must be shimmed up from the earth plane with some brass or copper. Take care here so as to approximate the impedance by keeping the insulation hard down on to the board. The connector flange must be packed up just the amount needed.

The feed-through capacitors should be UHF types and were scrounged from the junk box. They were originally obtained as "new" disposals. A UHF TV tuner type would be suitable.

The 47 ohm terminating resistors were old style but small solid carbon resistors obtained from a computer board. Modern types have a spiral groove and should be avoided. Select from those available and be prepared to use little taps to tune out



reactance. This approach was needed on a second unit built by Kevin VK3AUQ.

If you are unsure of the characteristics of your circuit board then check the dielectric constant of a piece of it. This is fairly simple to do. Just measure the capacitance of a sample and work out the dielectric constant. The 1/6th inch board used had a dielectric constant of 5 approximately.

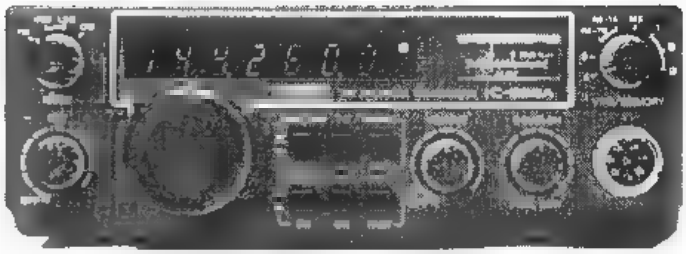
If you have different board then the formula in the RSGB VHF/UHF manual should be used to calculate the width of the microstrip. Sounds complicated but is really very simple.

The printed circuit layout is shown in Fig. 1 and the circuit is shown in Fig. 2. Precise hole drilling is not given as this will depend on the components available.

The whole PCB was mounted into the lid of a box so as to eliminate any strange effects due to the surroundings. A diecast box is great but any other metal box will do. ■

Collectors' Corner No. 4 –

The IC260A/E 2Mx All-Mode Txcvr



Gone are the days where rock bound rigs govern your operating frequencies as the new breed of CPU controlled devices such as the IC260A/E offer unlimited flexibility for mobile needs, or as a compact base unit.

The IC-260A/E provides FM, USB, LSB and CW coverage in the 143.8-148.2 MHz range (IC260A model), and offers continuous tuning from the low end of the 2m band to the high end and back again The transmitter uses a balanced mixer in a single conversion system, a band pass filter and a high performance low pass filter. The IC260A/E has a built-in noise blanker, CW break-in, CW monitor and has facility, if required, for the installation of a tone call unit.

SPECIFICATIONS

GENERAL

Numbers of semi-conductors	:	Transistor 72 FET 9 IC 45 (IC-260A 44) Diode 91 (IC-260A . 90)
Frequency coverage	.	144.0000 ~ 145.9999 MHz (IC-260A . 143.8000 ~ 148.1999 MHz)
Frequency resolution		SSB — 100 Hz steps, FM — 5 kHz steps; 1 kHz steps with TS button depressed
Frequency control	:	Microcomputer based 100 Hz step Digital PLL synthesizer Independent Transmit-Receive Frequency Capability
Frequency readout	:	7 digit LED 100 Hz readout
Frequency stability	:	Within ± 1.5 kHz
Memory channels	:	3 channels, any inband frequency programmable
Usable conditions	·	Temperature —10°C ~ 60°C (14°F ~ 140°F) Operational time· Continuous
Antenna impedance	:	50 ohms unbalanced
Power supply requirement	:	13.8V DC ± 15% (negative ground) 3.5A Max.
Current drain (at 13.8V DC)	:	Transmitting SSB (PEP 10W) Approx. 2.2A CW, FM (10W) Approx. 3.1A FM (1W) Approx. 1.6A Receiving At max. audio output Approx. 0.8A Squelched Approx. 0.6A
Dimensions	:	64 mm (H) x 185 mm (W) x 223 mm (D)
Weight	:	Approx. 2.7 kg

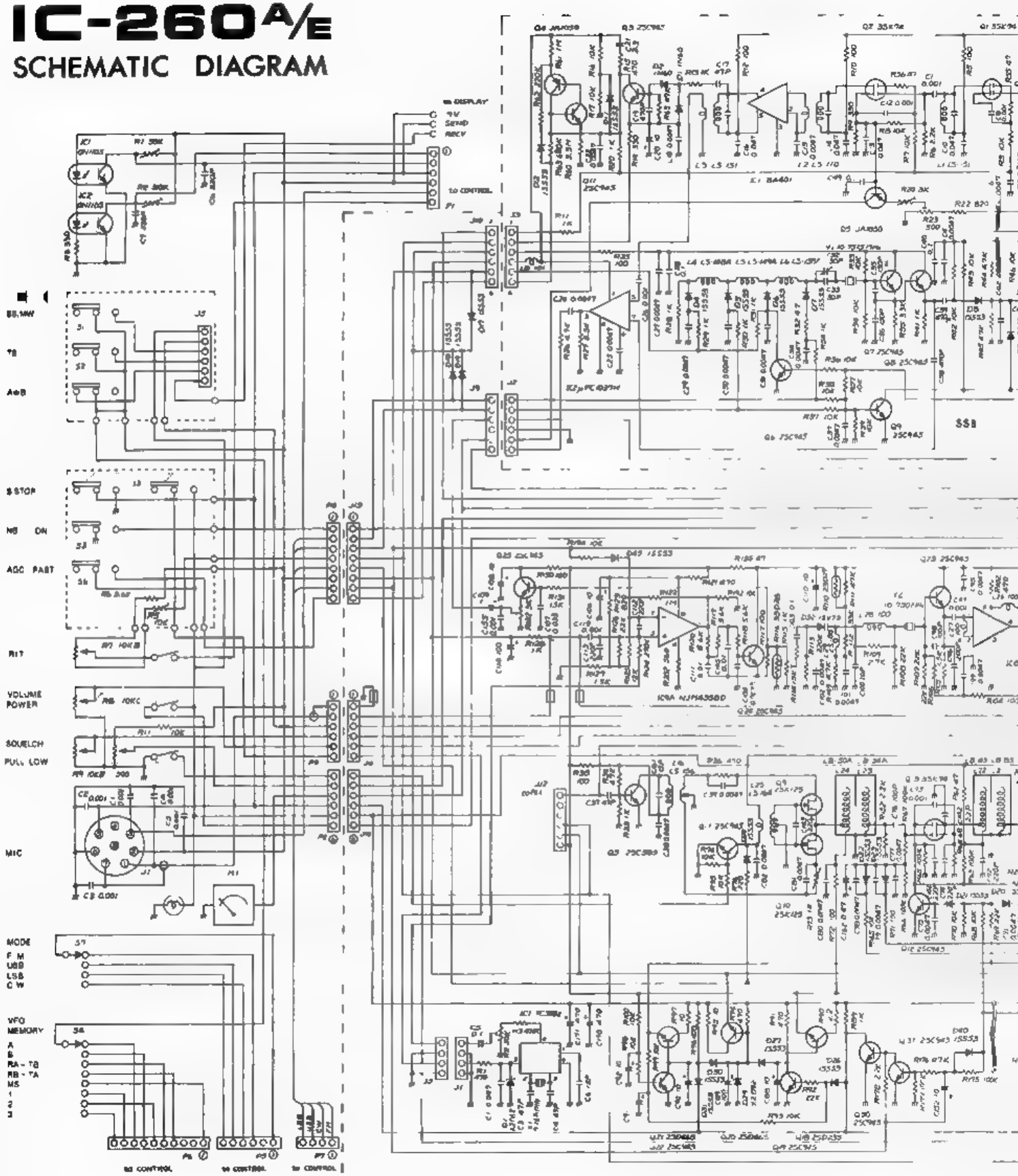
TRANSMITTER

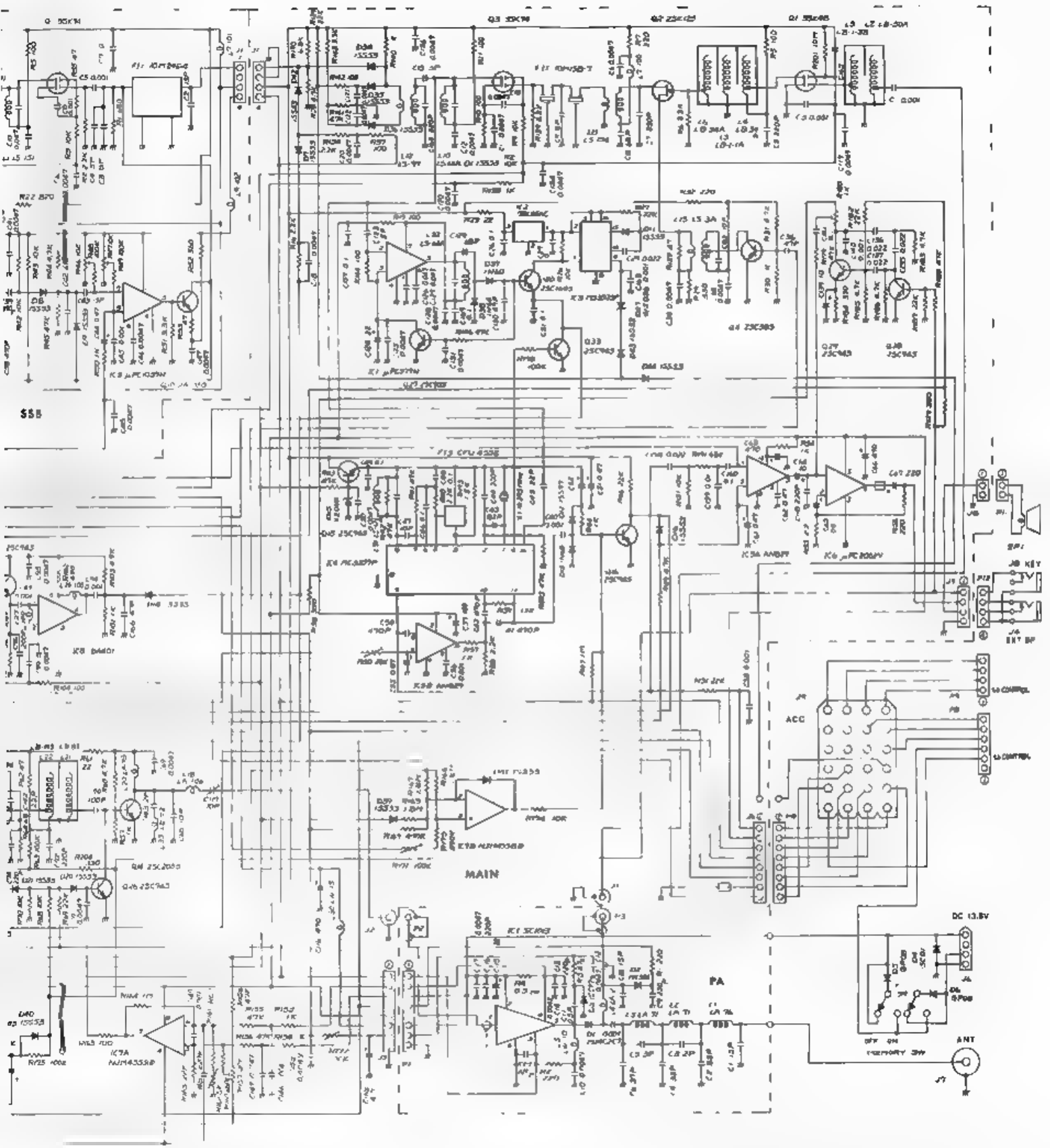
Output power	:	SSB — High 10 W (PEP), Low 1W (PEP); CW — High 10W, Low 1W FM — High 10W, Low 1W
Emission mode	:	SSB — (A3J, USB/LSB), CW — (A1); FM — (F3)
Modulation system	.	SSB — Balanced modulation, FM — Variable reactance frequency modulat on
Max. frequency deviation	:	± 5 kHz
Spur ous emission	:	More than 60 dB below peak power output
Carr er suppression	:	More than 40 dB below peak power output
Unwanted sideband	:	More than 40 dB down at 1000 Hz AF input
M crophone	·	1.3K ohm dynamic microphone with built-in preamplifier and push-to-talk switch
Operat ng mode		Simplex, Duplex (Any inband frequency separation programmable)
Tone burst	:	1750 Hz ± 0.1 Hz (IC-260A Not installed)

RECEIVER

Receiving system	:	SSB, CW — Single conversion superheterodyne FM — Double conversion superheterodyne
Receiving mode	:	SSB — (A3J, USB/LSB); CW — (A1), FM — (3)
Intermediate frequency	:	SSB, CW 10.75 MHz, FM 10.75 MHz, 455 kHz
Sensitivity		SSB, CW — Less than 0.5 microvolts for 10 dB S + N/N FM — More than 30 dB S + N + D/N + D at 1 microvolt Less than 0.6 microvolts for 20 dB noise quieting
Sque ch sensitivity	:	Less than 0.4 microvolts
Spurious response rejection ratio	:	More than 60 dB
Se ectiv ty		SSB, CW — More than ± 1.2 kHz at —6 dB point; less than ± 2 4 kHz at —60 dB po nt FM — More than ± 7.5 kHz at —6 dB point; less than ± 15 kHz at —60 dB point
Audio output power	:	More than 2W
Audio output impedance	:	8 ohms

IC-260A/E
SCHEMATIC DIAGRAM





ICOM ICOM INCORPORATED

FRONT PANEL

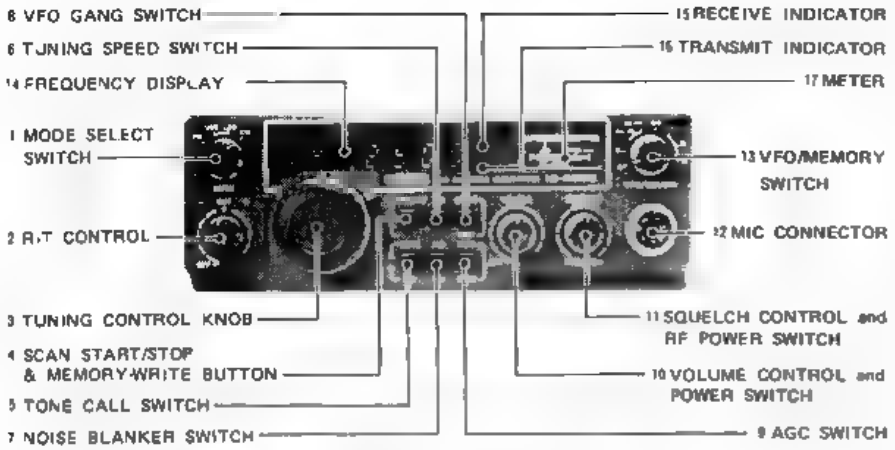
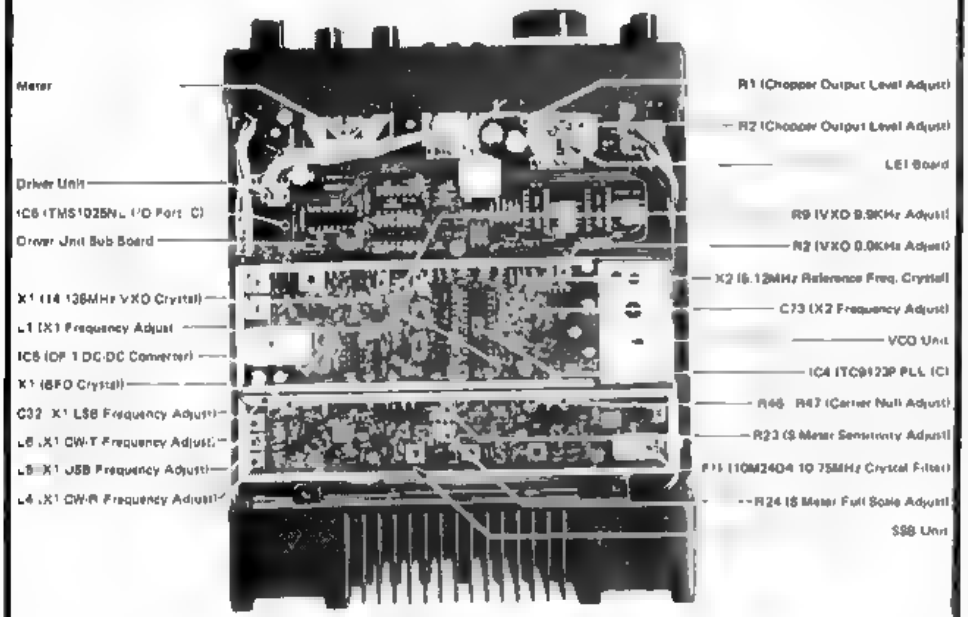
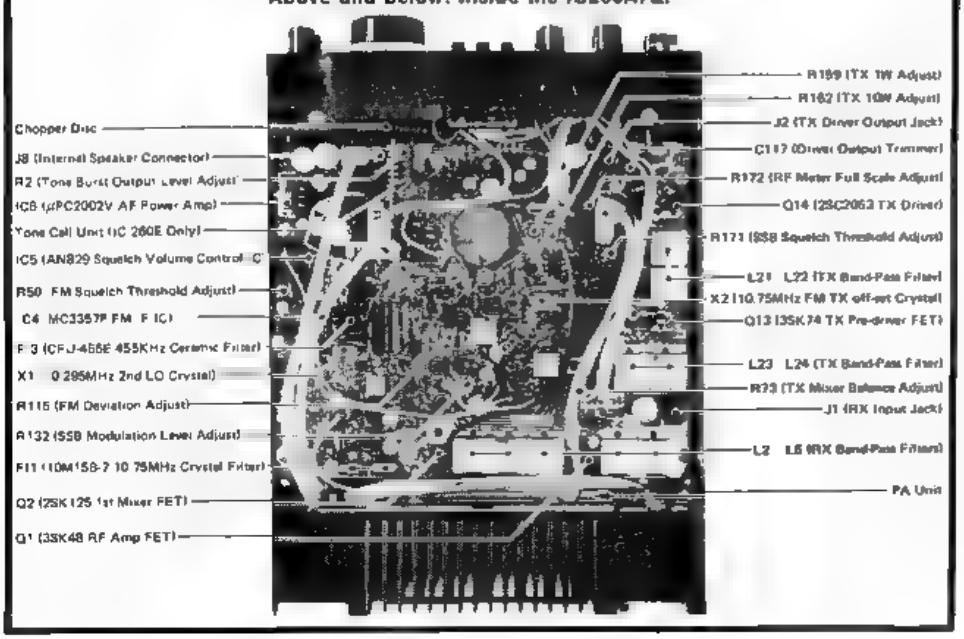


PHOTO 2: Control functions on the IC260A/E



Above and below: Inside the IC260A/E.



Most of the functional controls illustrated on the IC260A/E are self-explanatory but other points are interesting to note. The RIT (Receiver Incremental Tuning) shifts the receive frequency plus or minus 800 Hz of the transmit frequency without altering the display frequency. By pushing the SS/MW button frequencies may be pre-programmed into the three available memory channels and a programmed scan or memory scan commenced. The dual VFO feature allows two independent VFOs to operate or both A and B to operate together with the second VFO following the selected VFO at the same frequency difference initially set up.

In addition when the VFO is switched from one VFO to the other VFO, the frequency indicated on the frequency display just prior to switching goes into a memory inside the CPU. Thus even if "B" VFO is being used, switching to "A" again will enable you to operate at the initial "A" frequency. Switching back from "A" to "B" results in the same operation.

The numbers on the S-meter represent S1 through to S9 and 20 and 60 dB over S9. The RF output level meter functions as a relative output meter and does not indicate the wattage.

When the memory switch is in the ON (up) position, the power to the CPU of the IC260A/E is supplied continuously, even when the POWER switch on the front panel is switched OFF, to retain all the programmed frequencies in the memory channels, the operating frequencies of the two VFOs, etc. When the switch is set at the OFF (down) position, all the power, including that to the CPU, is turned OFF by turning OFF the POWER switch, so that all the programmed frequencies in the memory channels, the operating frequencies of the two VFOs, etc., are erased.

For further information on the Vicom IC260A/E contact the Australian distributors, Icom International, 68 Eastern Road, South Melbourne 3205. Ph. (03) 699 6700. Our thanks to Vicom for the supplied information on the IC260A/E. ■

Microphone plug exploded view

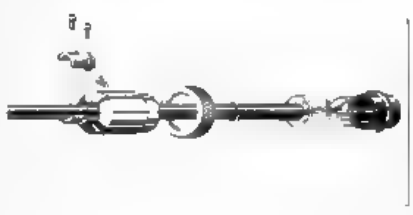
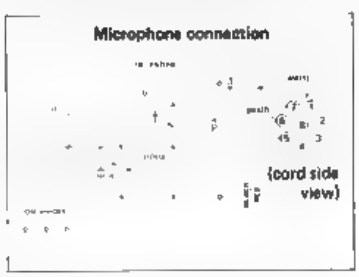


FIG. 1 (above) offers an exploded view of the microphone while FIG. 2 (below) shows actual mic. connections.

Microphone connection



Collectors' Corner is aimed at giving you, the reader, a better understanding of the types of equipment available for various applications in Amateur Radio. Your suggestions and comments regarding content in this section would be appreciated to ensure widespread reader appeal.

HANDY 2M FM/SSB MOBILE!

ICOM

IC260A

FEATURES

* **2m ALL-MODE TRANSCEIVER INCORPORATING A MICROCOMPUTER**

  CPU control with ICOM's original programs provides various operating capabilities. No back-lash dial controlled by ICOM's unique photo-copper circuit. Band-edge detector and Endless System provides out-of-band protection. No variable capacitors or dial gear, giving problem-free use. The IC-260A provides FM, USB, LSB, CW coverage in the 143.8 — 148.2MHz frequency range. Thus the IC-260A can be used for mobile, DX, local calls, and satellite work.

* **MULTI-PURPOSE SCANNING**

  Memory Scan allows you to monitor three different memory channels. Program Scan provides scanning between two programmed frequencies. Adjustable scanning speed. Auto-stop stops scanning when a signal is received in all modes.

* **DUAL VFO'S**

  Two separate VFO's can be used either independently or together for simplex operation, and any desired frequency split in duplex operation.

* **CONTINUOUS TUNING SYSTEM**

  ICOM's new continuous tuning system features an LED that follows the tuning knob movement and provides an extremely accurate readout. Frequencies are displayed in 7 LED digits representing 100Hz digits.

  Automatic recycling restarts tuning at the top of the band, i.e. 145.999.9MHz when the dial goes below 144.000.0MHz. Recycling changes 148.199MHz to 143.800.0MHz as well. Quick tuning is 1KHz steps is available, and fine tuning in 100Hz steps in the SSB and CW modes, and 5KHz steps and 1KHz steps in the FM mode, is provided for trouble free QSO.

* **OUTSTANDING PERFORMANCE**

  The RF amplifier and first mixer circuits using MOS FETs, and other circuits provide excellent Cross Modulation and Two-Signal Selectivity characteristics. The IC-260A has excellent sensitivity demanded especially for mobile operation, high stability, and with Crystal Filters having high shape factors, exceptional selectivity.

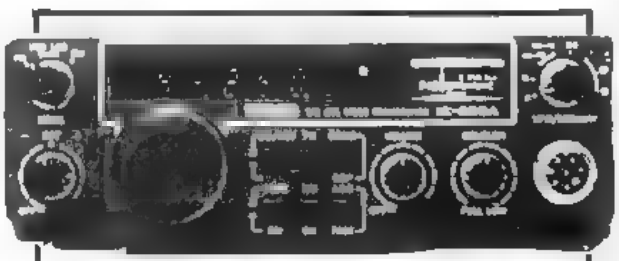
  The transmitter uses a balanced mixer in a single conversion system, a band-pass filter and a high-performance low-pass filter. This system provides distortion-free signals with a minimum spurious radiation level.

* **ADDITIONAL CIRCUITS**

  The IC-260A has a built-in Noise Blanker, CW Break-in, CW Monitor, APC, and many other circuits for your convenience. The IC-260A has everything you need to really enjoy VHF operation, in an extremely compact, rugged transceiver. Comes complete with mic, mobile mounting bracket and English manual.

* **BACKED BY VICOM**

  90 day warranty and technical/spares support.



THE ATTRACTIVE FRONT PANEL

Typical Characteristics (Australian model)

GENERAL. Number of semi-conductors: Transistor 72, FET 9, IC 44, Diode 90. Frequency coverage: 143.8000 — 148.1999MHz. Frequency resolution: SSB 100Hz steps, FM 5KHz steps, 1KHz steps with TS button depressed. Frequency Control: Microcomputer based 100Hz step Digital PLL synthesiser. Independent Transmit-Receive Frequency Capability. Frequency Readout: 7 digit LED 100Hz readout. Frequency stability: Within ±1.5KHz. Memory channels: 3 channels, any inband frequency programmable. Usable conditions: Temperature: —10°C — 60°C (14°F — 140°F). Operationable time: Continuous. Antenna impedance: 50 ohms unbalanced. Power supply requirement: 13.8V DC ±15% (negative ground). 3.5A Max. Current drain (at 13.8V DC): Transmitting: SSB (PEP 10W) Approx. 2.2A, CW FM (10W) Approx. 3.1A, FM (1W) Approx. 1.6A. Receiving: At max audio output Approx. 0.8A, Squelched: Approx. 0.6A. Dimensions: 64mm (H) x 185mm (W) x 223mm (D). Weight: Approx. 2.7Kgs. Warranty: 90 days when purchased from authorised dealers. **TRANSMITTER.** Output power: SSB: High 10W (PEP), Low 1W (PEP), CW: High 10W, Low 1W, FM: High 10W, Low 1W. Emission mode: SSB (A3J: USB/LSB), CW (A1), FM (F3). Modulation system: SSB: Balanced modulation, FM: Variable reactance frequency modulation. Max. frequency deviation: ±5KHz. Spurious emission: More than 60dB below peak power output. Carrier Suppression: More than 40dB below peak power output. Unwanted Sideband: More than 40dB down at 1000Hz AF input. Microphone: 1.3K ohm dynamic microphone with built in preamplifier and push-to-talk switch. Operating mode: Simplex, Duplex (Any inband frequency separation programmable). **RECEIVER.** Receiving system: SSB, CW: Single conversion superheterodyne, FM: Double conversion superheterodyne. Receiving Mode: SSB (A3J: USB/LSB), CW (A1), FM (F3). Immediate Frequency: SSB, CW: 10.75 MHz, FM: 10.75MHz, 455KHz. Sensitivity: SSB, CW: Less than 0.5 microvolts for 10dB S+N+D/N+D at 1 microvolt. Less than 0.6 microvolts for 20dB Noise quieting. Squelch sensitivity: Less than 0.4 microvolts. Spurious response rejection ratio: More than 60dB. Selectivity: SSB, CW: More than ±1.2KHz at —6dB point. Less than ±2.4KHz at —60dB point. FM: More than ±7.5KHz at —6dB point. Audio output power: More than 2W. Audio output impedance: 8 ohms.

VICOM

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68 Eastern Road
South Melbourne
Victoria 3205
Phone (03)699 6700

339 Pacific Highway,
Crows Nest, N.S.W. 2065
Phone (02)436 2766

AMATEUR SATELLITES

Charlie Robinson VK3ACR

OSCAR 7

The old girl is still chugging along, from the strength of the signals received from the 435.1 MHz beacon (when on Mode A) and the excellent signals when in Mode B, it would appear that it is still going to perform for some time. Although it has been reported that a cell in the battery system has failed and it is in its sixth year, it seems it cannot be deterred.

It has previously been reported that now Oscar 7 is out of the shaded area, that it will no longer be in Mode B continuously but will revert to Mode A on odd days and Mode B on even days.

This did occur late in August but recently it has been noticed that it is not holding true to this procedure.

For the last month Oscar 7 has been favouring Mode A, e.g., one night it may be on Mode B and then the next two nights it is on Mode A, so suggest that we monitor the 435.1 MHz beacon when we do not hear Mode B come up on schedule just to check if it is on Mode A.

However, to help preserve the old girl please keep your up-link ERP at a reasonable level. Let's keep it operating.

OSCAR 8

is operating normally.

The latest orbital calendars for Oscar 7 and 8 are available for a business size No. 10 SASE from —

Project Oscar,
P.O. Box 1136
Los Altos, Ca. 94022 U.S.A.

PHASE III B

Preparations are moving forward on the Phase III B project, and inventory of parts, etc., to see what is on hand is taking place. It is hoped that information more positive will come out of a meeting that was held last month (Aug.). It is also indicated that, although no definite launch opportunities have been defined, there is a strong indication we may be able to get a ride on ESA LO11 around February 1982, but again this is not definite.

There may be other military launches available, we just don't know; every possible effort is being looked into. And whilst on Phase III B, information from a recent Mode J Newsletter indicates that at Cape Kennedy a programme is under way to build the launch pad to accommodate a new improved Delta launch vehicle, that includes a 4 stage. This will no doubt launch a heavy payload. If this happens maybe the amateur space programme would benefit by having additional launch opportunities and possibly at an earlier date. It is understood this is being done because industrial customers want to get their hardware in orbit and find it cheaper to go with a 4 Stage Delta than waiting on shuttle which has had many many delays — maybe we can get aboard.

OVERSEAS SNIPPETS

Sources report the West German Government has given reasonable assurance to AMSAT Deutschland of financial support for upcoming Phase III B project.

This is fantastic news for the amateur space programme.

AMSAT has received word of co-operation and support of CNES (French equal to NASA). F8ZS, inspector-general of CNES, has assured AMSAT of maximum support through ESA.

Another Oscar???? Yes, this is not an amateur satellite in any fashion.

The name Oscar is for a new military programme — OPTICAL SUBMARINE COMMUNICATION by AEROSPACE RELAY, for communication with submarines. AMSAT legal beagles are investigating the name OSCAR (ours) is protected by copyright. **It appears not.** We'll see!

Congratulations to Alan VK2RX on his successful night at the Wagga Radio Club. We feel sure that the boys in that Club will benefit a great deal from his informative lecture on amateur satellites and from what I have heard, Alan's lecture dealt with the fundamentals, predictions, acquisition times and how to find them, etc. The interest must have been very rewarding for I understand it was a three and a half hour session.

Thanks, Alan — who knows we may hear a signal through Oscar 7 or 8 from the Wagga area in the very near future. We hope so.

Andy VK3YQX reports that FK8AK has been active on Oscar 8 Mode A, having worked Ed VK2ADJ and a number of ZLs.

One of the most consistent signals on Oscar 7 and 8 is our good friend Frank VK2ZI at Broken Hill. Frank has acquired an electronic talking clock. It sounds really fine — would he be operating in opposition to WWV ???

The Twelfth AMSAT Annual Meeting was held on September 13th, 1980, at the NASA Goddard Space Flight Centre, Maryland, USA. In accordance with the by-laws a ballot for the election of four Directors and two alternative Directors was counted and the successful candidates are as follows:—

1. **Tom Clark W3IWI**
2. **Pat Gowen G3IOR**
3. **Harry Yoneda JA1ANG**
4. **Rich Zwirko K1HTV**
5. **John Henry VE22VQ**
6. **Bill Tynan W3XO**

The Australian AMSAT Net is held on the third Sunday in each month at 1000Z on 7065 kHz ± QRM.

Anyone who is interested in amateur satellites is invited to participate. ■

The Unusual Dangers and Hazards of Radio

Anonymous

I recently acquired a shiny new beam for my tower (I am a radio amateur) and in my haste to erect it and to work the world I devised a new improved method of installation.

First, I assembled the beam completely on the ground and then, at the top of the tower, I added a pulley through which I threaded a rope. After meticulous calculations, I estimated that a plastic rubbish bin, if filled with water would counterbalance my own slight weight and the weight of the beam. To make sure I added a couple of house bricks to the bin.

Next I tied the rope to the plastic bin half filled it with water, pulled it to the top of the tower and tied the rope to the beam and to the bottom rail of the tower. I then climbed the tower, with the hose, and filled the bin completely.

I descended, stood astride the boom and released the hitch on the tower. The ascent was rather faster than anticipated (it turned out that the bin was oversize). As I rose, I was unable to avoid the descending bin and received a severe blow on the right shoulder, with minor abrasions to the neck and upper arm. Unfortunately, I reached the top of the tower so quickly that my fingers were drawn into the pulley, resulting in contusions and multiple lacerations. However, I remained calm and continued to hold the rope with both hands.

At that point, the bin hit the ground and split. As the bin emptied, it no longer counterbalanced my weight and that of the beam, so that I began to descend rapidly. I caught a glancing blow on my left buttock from one of the tower stays and was thrown into the path of the ascending bin, which bruised my right buttock and removed skin from my right leg. I was stopped by falling astride one of the lower tower spreaders and doubled up with the pain which naturally followed. In doing so, my forehead hit the corner of the tower.

At this stage I must have been no longer calm, for it seems that I completely parted company with the beam. With my weight removed, the bin was free to descend and, as it did so, it was upturned by the beam so that the bricks and the remaining water were jettisoned upon my unprotected head.

As I lost consciousness, I was severely bruised by the beam, which now weighed less than the empty bin and so fell back upon me. At least that is how my XYL found me ten minutes later. ■

DX

MODEL CONTROL LICENCES

According to Radio Comm September 1980 it has been announced in the UK that users of model control equipment, metal detectors and pipe-finders will shortly be freed from the need to have their equipment licensed. There were about 93,000 model control licences in force and about 150 000 licences for metal detector equipment. ■

USA CHANGES

July 1980 QST contains a note that the FCC has decided to permit standard bandwidth FM, 16F3 from 50.1 to 54 MHz. The present rules allow this only from 52.5 to 54 MHz. Also, ARRL will be petitioning FCC for more amateur privileges on the 160 metre band now that LORAN-A on that band is being phased out. ■

SEANET CONVENTION 1980

A letter from the Philippine Amateur Radio Association Inc advises that this year the annual Seanet Convention will be held in Manila 27th to 29th November. For information and reservations write to Box 445, Greenhills PO, Metro Manila, Philippines 3113. The daily Seanet is at 1200Z on 14320 MHz. A special prefix call 4D1SEA will be in operation during the Seanet Convention. PARA also draws attention to their UN-DU Award. ■

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3 EL 15m	**$73.00**
3 EL 20m	**$145.00**
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VK3BWW

WERNER & G. WULF

92 LEONARD AVENUE

ST. ALBANS, VICTORIA 3021

SPOTLIGHT ON SWLing

Robin Harwood VK7RH

5 Helen St., Launceston, Tasmania 7250

When listening across the various wavebands, eventually you will hear stations communicating among themselves in a variety of modes. Perhaps an intercontinental jet winging its way across the vast expanses of the ocean. Or small fishing trawlers exchanging information on weather and yields, etc. Or stations transmitting navigation and meteorological bulletins for aeronautical and maritime facilities. These stations are grouped together as Utilities. As can be gathered, these broadcasts are not designed for general public consumption, and the contents of their traffic are therefore protected by secrecy by International Treaty. It is an offence for any individual to disclose any messages or traffic he may monitor

The Australian Radio DX Club has published an Australian Utility Radio Handbook with information of stations that transmit from within Australia. The price of this guide is $10 and can be ordered from the Club Publications Secretary at PO Box 300, Blackburn, Vic. 3130.

ARDXC has also published many other guides and information to aid the SWL DXer. I recommend that you enquire about these and details about the Club by writing to it at PO Box 227, Box Hill, Vic. 3128, and enclosing a 50c stamp to defray postage. They publish an excellent monthly bulletin the Australian DX News. It contains a wealth of information for the serious and casual DXer. The Club also conducts a weekly net on Tuesdays at 1200 GMT on 3545 kHz ± QRM, net control is Rob Wagner VK3BVW. Thanks to Rob Williams for supplying details of ARDXC.

At the time of writing, the Iranian-Iraqi conflict is in full swing. The two protagonists are engaged in a full scale war of hyperbole on the airwaves. Teheran can be heard very loudly during daylight hours here on 15084 kHz broadcasting in Farsi, the language of Iran. Its modulation is distorted very heavily most times. However, Baghdad is a little more difficult to receive. I believe it has been heard running in English on 11945 kHz at 2200Z repeated to North America at 0300Z on the same channel.

Well, until next month, 73s from Robin L. Harwood. ■

CHANGE OF ADDRESS

*

If you have changed your address or if you intend shortly to change address —

PLEASE

Notify the Executive Office as early as possible.

Do not leave this to be done when you pay your subscription at the end of the year.

EXECUTIVE OFFICE

P.O. Box 150, Toorak, Vic. 3142

FORWARD BIAS

VK1 DIVISION

(Postal Address: WIA (ACT Division) Inc., PO Box 46, Canberra, 2600 ACT)

OUR CONTENDER FOR YOUNGEST AMATEUR

Eleven-year-old Charlene Dwyer, daughter of Reg VK1BR, has passed the CW part of her Novice exam. Coming up next for Charlene are the regulations and theory segments — and she is confident about these. She is studying with Ted Radclyffe's (VK1TR) Novice class and is also receiving very valuable help from Dad — and from Mum (who may be the next candidate!) There's every chance that Charley VK1N?? will be on the air in January 1981.

On the subject of classes, we shall soon be planning our programme for next year. Any would-be amateur thinking about the 1981 exams and who may be interested in enrolling on one of our courses is invited to get in touch with the Division at our PO Box. As before, we shall be running classes for Novice and for full AOCP.

RTTY

In order to expose members to this mode and give them a chance to set up and tune their equipment, a number of local VK1s operated on the mode after the usual Sunday evening broadcast on 21st September. The tests conducted used AFSK — 170 Hz shift — with BAUDOT and ACSII codes. These Sunday transmissions will hopefully be a regular feature. ■

VK2 MINI BULLETIN

Divisional Council is looking into the feasibility of conducting the Sunday morning broadcasts from Dural. Any decision would be subject to the availability of operators prepared to travel to Dural. Any member who would like to volunteer, either as an announcer or engineer, please write to the Divisional Secretary, Box 123, St. Leonards 2065. Volunteers are also welcome for the broadcasts from Atchison Street.

The Amateur Advisory Committee has recently been re-formed in NSW. This is essentially a "buffer" committee which makes recommendations to the P. and T. Department. P. and T. then issues cautionary notices to amateurs for minor infringements of a technical or regulatory nature.

Clubs cannot be members of the NSW Division, only affiliates. Those clubs which are currently members will not be receiving renewal notices for membership at the end of this year. Affiliated clubs may purchase "Amateur Radio" for club libraries by applying to the Divisional Secretary the charge being the same for an ordinary member, that is $22 for 1980. Twenty-six clubs are affiliated with the NSW Division as at 1-10-80

Avondale ARC, Avondale College, Cooranbong 2265.
Bathurst ARC, Box 343, Bathurst 2795.
Central Coast ARC, Box 238, Gosford 2250.
Coffs Harbour ADARC, Box 655, C. Harbour 2450.
Goulburn ARC, 40 Hume Street, Goulburn 2580.
Griffith RC, Box 4, Griffith 2680
Gunnedah ARC, Gunnedah HS, Gunnedah 2380.
Hornsby ADARC, Box 362, Hornsby 2077.
Illawarra ARS, Box 1638, Wollongong 2500.

Liverpool ADARC, 105 Willan Drive, Cartwright 2168
Manly Warringah DRC, Box 186, Brookvale 2100
North West ARG, "Oringle", Orange Gr Road Gunnedah 2380.
Nov ce ARG, Box 415, Lane Cove 2066.
Orange ARC, Box 1065, Orange 2800.
OTC(S) ARG, Box 321, Maroubra 2035.
Oxley RARC, Box 712, Port Macquarie 2444
Parkes ADARC, 247 Clarinda Street, Parkes 2870.
Penrith ARC, 81 Newham Drive, Cambridge Park 2750
South West ARS Box 1016, Griffith 2680
Southern Highlands ARS, Telephone Exchange, Bowral 2576
Summerland ARC, Box 524, Lismore 2480.
St George ARS, Box 77, Penshurst 2222.
Taree ARC Box 712, Taree 2430
Tumut ADARC 15 Broughton Street, Tumut 2720.
Wagga ARC, Box 71, Kooringal 2650.
Westlakes RC, Box 1 Teralba 2284

In each edition of AR details of several affiliated clubs will be published. This month Summerland, Central Coast and L verpoo

SUMMERLAND AMATEUR RADIO CLUB

Nets: Fridays 8 p.m. on **28.54 MHz** and repeater channel 6800 using **VK2AGH.**

President: G. Douse VK2AGE. Secretary, D Raymont VK2DLR Other Committee, J. Wicks VK2DAW A Webb VK2UC, A. Chapple VK2BEV R. Virtue VK2VSW

Repeater: VK2RIC, channel 6800 (4), Lismore

CENTRAL COAST AMATEUR RADIO CLUB

Net: Tuesdays 8 p.m. on **3565 kHz** using **VK2AFY/P.**

Meetings: 8 p.m 1st and 3rd Fridays, Dandaloo Street, Karlong

Classes: 7 30 p m. Wednesdays at both Dandaloo Street, Karlong, and Wyong High School, Wyong

President: R. Wells VK2BVO, Vice-President, J Pogson VK2DBC Secretary, S. Wells, Other Committee, L LeBreton VK2AKT, S Dogger VK2ZRD/VFW, L McNab VK2DDM, K Lidden VK2YAY

Field Day: February at Gosford Showground

Repeaters: VHF VK2 RAG, channel 6750 (3) UHF VK2RUG, channel 4650 — to be changed subject to P. and T approval to 8075 (438 075 MHz output-435.075 MHz input) Both repeaters at Somersby (near Gosword), 340m above sea level

Newsletter: Smoke Signals" published monthly

LIVERPOOL AND DISTRICT AMATEUR RADIO CLUB

Nets: Sundays 9.30 a.m. on **3580 kHz** using **VK2AZD/P. Mondays 8.30 p.m.** on **146.55 MHz** using **VK2AZD/P.**

Meetings: 7 30 p.m. 2nd Tuesdays, Liverpool Public School Bigge Street, Liverpool

Classes: 7 p.m. Tuesdays (other than meetings nights), at Liverpool Public School AOCP and NAOCP.

President: V Rochfort VK2BVR, Vice-President, L. Anderson VK2VCF/YOU, Secretary, S. Samuel VK2VVK; Other Committee, J. Dutfield VK2NOD/YRY, J. Pages VK2BYY, P. Johnstone VK2VXA.

Foxhunts: 4th Wednesdays 7.30 p.m. on 28.3 and 146 MHz, both DF, from Liverpool Swimming Pool, Memorial Drive, Liverpool

Field Day: March

Newsletter: "Bullsheet", available monthly at club meetings.

RETIREMENT OF CEC BARDWELL

In 1960 Cec Bardwell VK2IR, a life member of the Institute, took over the NSW Division's personal lecture classes for the AOCP at the request of the late W Lewis VK2YB. Cec conducted both CW and theory classes initially, as well as developing the NSW WIA Correspondence Course At a conservative estimate, over 400 amateurs have achieved their licences as a result of Cec's personal lecture classes. Even large numbers have been involved in his correspondence course world-wide

In December this year, after twenty years of continuous evening lecture classes, Cec is retiring from lecturing He has devoted an enormous amount of his time to the classes. He will continue with supervision of the correspondence course

Cec's services have been of inestimable benefit to the Division and amateur radio generally, both in the number of amateurs he has trained and financially. The grateful thanks of Council and members go to Cec and his wife on his retirement Cec's final lecture will be on Thursday, 11th December, at Atchison Street, Crows Nest. (Advice of next year's WIA personal lecture classes will be given at a later date)

MORSE SERVICE

The NSW Division conducts a slow morse service every night of the week on **3550 kHz** commencing at **0930Z.** The station conducting the transmission varies each night of the week, but always signs VK2BWI/VK . . QTH. Below is a list of the volunteers currently participating

Monday: Don **VK3AKN,** Hawkesdale/Vic., 120W dipole

Tuesday: Simon **VK2ADS,** Tambar Springs (near Glen Innes), 120W dipole

Wednesday: Ken **VK2BKE,** Lord Howe Island. 120W dipole

Thursday: Lloyd **VK2BLK,** Oatley (20 km SW of Sydney), 120W dipole.

Friday: Mark **VK2DI,** Mt. Colah (25 km N of Sydney), 120W dipole.

Saturday: Sue **VK2DKU,** Gundaroo (north of Canberra), 120W dipole.

Sunday: Dave **VK2NAW,** Golspie (near Goulburn), 10W dipole

Speed and form of practice vary from operator to operator. Generally however speeds range from approximately 5 to 14 words per minute, except for Friday night, which is 5 to 20 words per minute The broadcast finishes at 1030Z, when VK5 takes over on 3550 kHz for a further hour of CW practice Most users of this service are beginners in amateur radio and may not possess a super selective "state of the art" receiver **Please give the frequency a wide berth — remember, we all were learners once.** Those of you who have used or are using the service might like to drop a note of thanks either direct to the operators or to the Morse Supervisor (Mark Salmon VK2DI), Box 123, St Leonards 2065

COMING EVENTS

Sunday, 16th November.

Blue Mountains Field Day. Write to Box 54 Springwood 2777, for a programme

Saturday, 29th November:

Grand Divisional Auction at 14 Atchison Street, Crows Nest, 2 p.m. sharp Lots of goodies!

News for inclusion in Divisional Notes must normally reach Box 123, St Leonards 2065, by the 1st of the month prior to publication. To facilitate the early printing of December and January AR copy must be at the above address for inclusion in this column by November 3 (December Issue) and November 17 (January issue)

THIRD PARTY TRAFFIC

After discussions with local P and T Officers, Divisional Council cautions members against actively soliciting Third Party Traffic The necessary changes to regulations have not yet been made. ■

A Call to all holders of a

NOVICE LICENCE

Now you have joined the ranks of Amateur Radio, why not extend your activities?

THE WIRELESS INSTITUTE OF AUSTRALIA
(N.S.W. DIVISION)

conducts a Bridging Correspondence Course for the AOCP and LAOCP Examinations.

Throughout the Course, your papers are checked and commented upon to lead you to a SUCCESSFUL CONCLUSION.

For further details write to.

THE COURSE SUPERVISOR, W.I.A.

P.O. BOX 123, ST. LEONARDS, N.S.W. 2065

QRK5

A monthly transmission from the Victorian Division WIA.

Written and co-ordinated by VK3WW, QTHR.

A new procedure for council meetings is being tried out. Basically it requires more reading and writing and a lot less talking.

If successful, council meetings will be shorter and more efficient.

Could we then hope for more candidates for council in 1981?

A major requirement for a nominee will be the ability to read and write in clear unequivocal English and, of course, the willingness to do so.

WILLY WILLY'S WORDS

It is good to see letters to the Editor discussing the proposal of limited tenure for the Novice licence. I don't intend to take sides in this column, but of course have my own opinion on the subject.

That is the point. Every licensed amateur is entitled to his opinion and to express it.

When writing a case it is good advice to be objective and not emotional, and to read and re-read the other fellow's case and try to understand it. Emotional outbursts — in print or verbally — do nothing but harm the case expressed.

One fact to remember is that all Limited and Novice licence holders owe their existence to the efforts of the WIA.

29th September, 1980.

The Editor
Dear Sir,

It is with some indignation that I write this letter of complaint re the disparaging comments made in your column ORK5 in AR of September 1980.

Having read the column several times, and then allowing myself time to cool down, I offer the suggestion that a better name for the column would be ORK1.

The remarks made about holders of the LAOCP and the NAOCP are, to say the very least, elitist, and in particular, the reference to Novice licensees as 'Temporary calls' is offensive.

It has been stated by many that the introduction of the Novice licence gave a shot in the arm to a stagnant amateur radio scene, just as the introduction of the Limited licence gave a boost to VHF usage.

One has only to listen to the Novice sections of the amateur bands to hear them being put to good use, and if they are not used, we will lose them. Perhaps had there been a large number of active Novices to fill up 11m, maybe this band would have still been an amateur allocation.

So what if operating procedure is not always perfect or the jargon in use is not 1920s vintage? The bands are ALIVE and ACTIVE.

Every six months the ranks of the full calls are being swelled by the upgrading of those detested Novices.

It would be appreciated if your columnist got the message to "lay off the Novice".

Yours faithfully, VK3NWO. ■

The Limited licence was introduced in 1954, at the same time the age limit was lowered from 18 to 16. In 1968 the morse speed was lowered from 14 w.p.m. to 10 w.p.m. Recently after introduction of the Novice licence all theory exams have been presented in multi-choice format.

All this has been achieved by the efforts of the WIA. It is reasonable then to expect all licensees to be members of the organisation that has made their existence possible.

I know you, dear reader, are a member, so try the above information on any non-members — you know it might just help them decide to join the WIA.

FROM CLOBLAND

Did you read the QSP in the September issue of AR? Briefly — 78 per cent of the membership of the EMDRC are members of the WIA. This is a commendable achievement and should kill the unjustified rumour that this club is anti-WIA.

What about Victoria's other clubs? Can any better this figure?

"GWEN MEREDITH RETURNS"

Lives there a Melbourne 2m FM listener who has never heard of the **"BLUE HILLS POWER SUPPLY"???** The concluding chapters of this epic saga are being written and will appear in "AR" in the near future, complete with absolutely superlative pictorials (no not of Gwen Meredith). In the true tradition of all great productions I understand a shortened article was published by a club in a small town a little north of Melbourne, where it was well received.

For younger readers information, "Blue Hills" was a radio serial running for many thousands of episodes, written by Gwen Meredith and broadcast by the ABC.

LIBRARY NEWS

In addition to the manuals mentioned last month, your library contains a lot of reference texts on solid state devices, valves and other components. A visit any weekday between 10 a.m. and 3 p.m. or on monthly meeting nights will reveal a wealth of reading material from the latest overseas magazines back to the 1929 Admiralty Handbook. Whatever your particular interest there is something for you.

We are trying to complete sets of more recent magazines and would appreciate donations of any of the following:—

CQ February-June inclusive, 1977.

Ham Radio: January-June inclusive, 1976; January-December inclusive, 1977; January-June inclusive, 1978.

Radio Communications: November, December, 1978, August, 1979.

73: January-August inclusive, 1978.

Donations will be acknowledged in this column. Please forward to —

Librarian,
WIA, Victorian Division,
412 Brunswick Street, Fitzroy.

QUESTION TIME

This month nostalgia corner —

Do you remember the series tuned 807 on 2 metres?

What was a UM2?

Have you used a D104?

Could you make a Windom in 15 minutes?

If you can answer 3 out of 4 correctly you are an old-timer or a keen student of amateur radio history.

A NEW AWARD

The **QWAFT** Award has been printed. Many thanks to **Laurie VK3ALB.** It is available to all who have had two-way contact with any five **THUGS** (Thursday Group Socializers). Full details will appear in the awards column. Anxious applicants should contact VK3WW, VK3AZA, VK3JN, VK3ZFA.

ADVANCE AUSTRALIAN ANTENNAS

Watch for **"Lambda M Squared"**, an anthology of Australian articles about antennas and accessories.

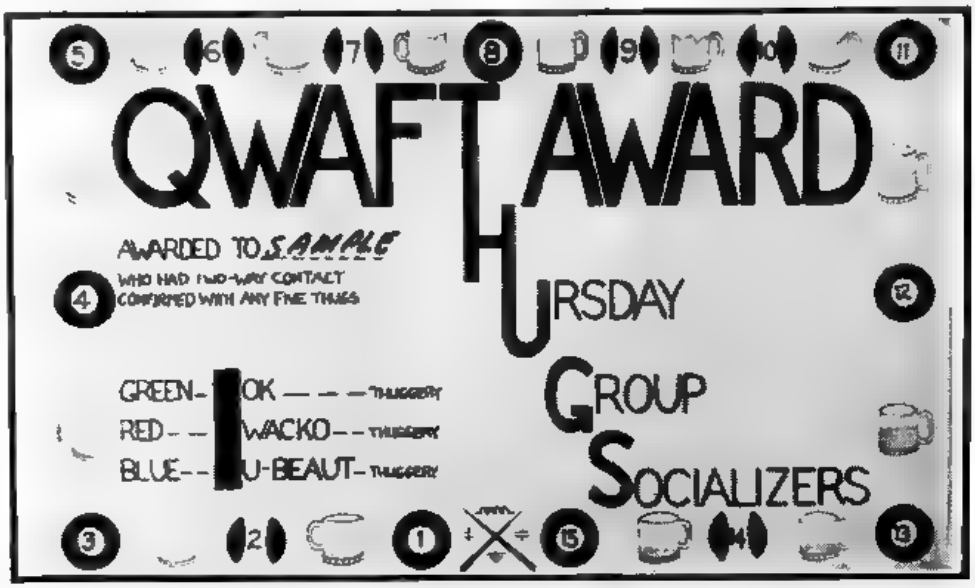
NOTE:

There is no prize for counting the "As" in the above sentence.

ZONE VISITS

In recent months our President Allan VK3BBM has visited a number of zones in Victoria, thus providing close personal communication with country members. Thank you, Allan. That's all for now.

73 Mike. ■



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ANTENNAS

TET HB35C 10-15-20M 5 el log/yagi 13' boom	$415
CUSHCRAFT A3 10-15-20M yagi 14' boom	$325

HY-GAIN

TH3-JR 10-15-20M 3 el yagi 12' boom	$250
DB10-15A 10-15M 3 el yagi 13' boom	$190
153-BA 15M 3 el yagi 12' boom	$120
18-AVT/WBa 10-80M trapped vertical 21'	$125
8 el 2M yagi 14' boom 15db gain	$40
14 el 2M yagi 16' boom 18db gain	$50
GPG-2 2M 5/8W co-linear 3-4db gain	$30
6M and 2M ¼W whips	each $9

HELICAL MOBILE WHIPS 10-15-20-40-80M

heavy duty de-luxe models w/adj. tip each	$25
As above ANY TWO WHIPS plus mount & spring	$60
As above FIVE WHIPS plus mount & spring	$115
NOVICE PACK 10-15-80M whips plus mount & spring	$80
GPV-5 2M base co-linear 2 x 5/8W.	$55
OSCAR-2D 2M mobile co-linear 2 x 5/8W	$35
BN-86 balun (for beam buyers only)	$25
HI-Q balun 50 ohm 1KW 1:1	$15

HENRY RADIO FAMOUS LINEARS

2KD-5 2KW PEP 80-10M SSB/CW/RTTY/AM.	$1000
1KD-5 1200W PEP 80-10M SSB/CW/RTTY/AM	$800

KYOKUTO FM-2020A

The very latest 2M FM from KDK 25W
10 memory channels plus full scanning etc. $340

ACCESSORIES

SWR meter Hansen twin meter 150MHz	$35
SWR meter single meter 150 MHz	$25
ASAHI Chrome bumper mount	$8
Standard bumper mount	$5
Chrome base & spring to suit ASAHI mount	$15
FERGUSON 240V AC transformer 2 x 9V secondaries at 3A	$8
DYNASCAN 820 digital capacitance meter	$150
TRIO DM800 grid dip meter	$120

NOVICE SPECIALS — CONVERSION CRYSTALS

SET OF 8 crystals converts 28.480-28.595 in 5KHz steps
Clarifier tuning on Tx & Rx plus info to re-activate 24th ch
$32

ROTATORS & CABLES

CDE BT-1A BIG TALK light duty programmable 4 pos. push button plus normal operation	$110
KEN KR-400 medium duty	$140
CDE HAM-1V heavy duty	$225
CDE T2X TAIL TWISTER extra heavy duty	$300
KEN KS-065 stay/thrust bearings	$30
8 core rotator cable per metre	.80c
RG-58U coax cable per metre	.50c
RG8U foam coax cable per metre	$1.20

TRIO-KENWOOD PRODUCTS

Ring for a competitive price on Trio-Kenwood transceivers, TS-180S w/WARC frequencies, TS-120S, TS-520SE, TR-9000, TR-2400 etc

TS-130S HF all band WARC transceiver	POA
R-1000 Digital clock receiver	POA
SP-100 external speaker R-1000	$32
SP-180 ext. speaker TS-180S w/filters	$60
AT-180 200W ant. tuner/SWR/Power	$160
TV-502 2M transverter	$250
TR-7200G 24 ch 2M FM fitted 6 channels	$160
TR-7625 2M FM transceiver	$325

YAESU MUSEN PRODUCTS

FT-101ZD 160-10m transceiver w/coding fan & AM board	$850
FT-707 80-10m transceiver 12v DC SSB/CW/AM	POA
FP-707 240V 20A power supply.	POA
FC-707 ATU/SWR meter/dummy load	POA
FV-707 Digital VFO memory unit for FT-707	POA

COAX CONNECTORS

PL-259 RG-8U & RG-58U types	.75c
Cable joiners RG-8U & RG-58U types	.60c
GLP right angles RG 58U to SO-239 w/lock nut & weatherproof cap	$1.50
SO-239 4 hole & single hole types	.75c
MLS right angle RG-58U to PL-259	.75c
In-line mic sockets 3 & 4 pin each	.60c
Mic sockets 3 & 4 pin each.	75c
M-ring body mount w/lock nut	$1.50

All prices are NET, ex Springwood NSW, on pre-payment with order basis. All risk insurance is free of charge, allow for freight charges by air, road, rail or post, excess will be refunded. Prices are subject to change without prior notice. All orders cleared on a 24 hours basis after receipt of order with payment.

Roy Lopez (VK2BRL)

LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

16 Wandilla Street, Largs Nth., SA 5016
20-7-80

The Editor,
Dear Sir,

In regards to the letter published in AR July 1980 by VK3AMG, I agree with one item which is not to degenerate to CB level as far as the rest is concerned, I suggest that VK3AMG change his call to VK3GOD. I am certain that novice operators would not outlay $1000 or $1500 for equipment if the licence was only valid for two years. Unfortunately not all novice operators have the knowledge which he presumably possesses. I for one had an attempt for the limited call but failed, I will try again when I feel that I am ready, irrespective if it takes one, two or five years. I am not in the electronics business and don't mind admitting that I do not know a great deal about it, just enough to obtain my novice ticket. I believe there are a lot of novice operators like myself but that does not give 3AMG the right to have a shot at us, most novice operators try to do the right thing.

In case 3AMG does not know, there are many phases to the hobby. There are experimenters, builders, DX hunters, wall paper chasers, contest operators, rag chewers, etc, so whether we are in the right or wrong hobby is to the individual to decide, not 3AMG.

I have some friends among the full call licensees who have given me all the assistance I have ever asked for and I am glad they do not all adopt the attitude of VK3AMG. If VK3AMG does not want to associate with novice operators there is plenty of room on the bands where novice operators are not allowed to operate. In any case in the interest of the hobby it would be far better to co-operate with each other instead of being at each other's throat.

Yours faithfully,
Bill Vogt VK5NVW. ■

27 Banksia Street, Joondanna, Perth 6060
17th July, 1980

The Editor,
Dear Sir,

I would appreciate it very much if you could publish the following letter in reply to Mr. Jack Mellor VK3AMG in your next issue of Amateur Radio. His letter appeared in Vol 48, No. 7, of the July issue.

It appears that Jack Mellor has completely lost sight of the fact that amateur radio is a hobby, and that those people who wish to do a hobby usually do so for enjoyment, relaxation and the pursuance of more knowledge in their chosen field.

I have been a novice operator now for a little over a year and when the opportunity arises I read radio and electronic material in a bid to improve my knowledge and understanding in the field of amateur radio.

I despair when I read, quote, "If you cannot make AOCP after two years then you are definitely in the wrong hobby". Perhaps Jack Mellor has considerable time on his hands in which to pursue the higher 'status' of full licence. Myself as a full time lecturer, place prime importance in my occupation and profession, but enjoy those moments when I can get on the rig. I am one of those people in the situation where time is a precedent and I will not be for at least three years before I can pursue the higher "status" in my "hobby".

Wake up Jack Mellor, pat yourself on the back and say to yourself "I did it". But let us be a little less selfish and remember those other guys who also enjoy the hobby, and sincerely intend progressing towards AOCP when their circumstances permit.

Yours sincerely,
Mike Taylor VK6NMT ■

VK2ZRD/VFW
71 Lonsdale Avenue, Berowra Heights 2082
26-7-80

The Editor,
Dear Sir,

Several correspondents have written recently on novice licensees and the new bands. VK3AMG says that, having risen to the "dizzy heights of 5 w.p.m.", some novices are content to stay novice. That may well be, however many novices have had a hard time making 5 w.p.m. and many are still trying to obtain a 10 w.p.m. examination pass. Being able to copy 10 w.p.m. or so in the shack is quite a deal easier that passing an examination — many people, prominent as well as insignificant, have not been able to front up to an exam let alone pass it. Many like myself are not going to let 10 w.p.m. beat us, but it takes time. It might have been easy for you, Jack, but I've found it difficult. Many others have quit or didn't even try!

If the new bands are to be exclusive to specialised systems and operators — then require all licensees to sit for an advanced ticket — no exemptions, and then we'll see how some of these guys handle microprocessors, digital technology, advanced solid state theory, etc., not to mention the maths.

73, Stan Dogger. ■

4 Turner Street, Balmain 2841
2nd August, 1980

The Editor,
Dear Sir,

In the July issue of AR, Jack VK3AMG raises an important issue. The Novice classification should be a stepping stone to the AOCP, however as Jack points out, not all Novices intend to earn their way to the full call.

I agree with the implied criticism, in my opinion anyone willing to share in the benefits of amateur radio should also assume some responsibility to keep the standard set in earlier days. For this reason I consider it reasonable that a time limit should be set on the Novice licence.

However I think it is important to make the observation that, although the Novice examination is elementary and well within the capabilities of a sixteen-year-old, it is a sizable hurdle for those at the other end of the time scale. Students over fifty years of age have to make a far greater effort than the under thirty year brigade, short retention memory is a very real handicap.

I can think of few activities more suited to the retired generation than amateur radio, and the maturity the older ham brings to our hobby will not go amiss as more eleven metre devotees step across the small barrier of the Novice examination.

By all means let us demand evidence of some application by our Novices if they are to remain on the ham bands, but not at the expense of snatching away a worthwhile activity from our senior Novices.

Yours faithfully,
Hal Wise VK2OHE. ■

PO Box 27, Portland, Vic. 3305
20-8-80

The Editor,
Dear Sir,

On the 17th of this month at approximately 7.30 p.m. I was in contact with VK3VUV, VK2VZX and ZL1LN in Christchurch, when VK2BGL came up on frequency and stated that this frequency was to be used for broadcasting the NSW WIA news and without further ado the news was broadcast over the top of us. We did not have a request to shift or time to say 73s to our friend in New Zealand. This to me shows the ignorance of some people — probably because we had novice calls.

I have been a member of the WIA Vic. Division for many years and was appalled at the attitude of someone representing the WIA, even if it was in another State.

Would you please publish this for further comment.

Yours faithfully,
John F. Cheaver VK3VNQ. ■

The Editor,
Dear Sir,

I was very interested to read QSP 'The Art of Communication" in the last AR and respectfully suggest that the WIA itself is lacking in the basic interpretation of this necessary commodity, especially in the matter of internal (national) frequency spectrum usage in the amateur frequency allocation.

I refer specifically to RTTY and slow morse operations on 80m. Both are operated under the umbrella of the WIA and yet both operate in the same frequency area 3545-3550 MHz, causing interference to both services. I have heard senior RTTY operators refusing to move because they were "there first" and, after all, "it is the international frequency allocation for RTTY". The operators providing the slow morse service naturally feel angry because they don't want hours of work provided for an amateur service ruined by QRM.

I am only a relative newcomer to amateur radio, but I am very grateful to the service provided by the slow morse organisations of various States for the assistance they provided in upgrading my morse qualifications. I am now into RTTY and enjoy that immensely. I can also appreciate the frustration of the old-timers who have done years of work to foster and develop RTTY in the Australian Amateur Service. They both have a valid complaint. It's not new, if you listen to the VK2TTY on Sunday evenings at 0930Z you will usually even hear the slow morse blokes discussing the QRM that's about to occur.

I believe it is time the WIA stepped in, convened a meeting of the interested parties and, after considering all points of view, issued a rational suggested use of the frequency by both parties. Perhaps an article giving the suggested frequency usage areas for all bands would not go astray and then you could inform me why we only have one suggested 2m FM channel for major city areas. It is hard to get a tone in anywhere on most nights.

I hope this is in the spirit of the July AR QSP "Art of Communication".

Name and address supplied. ■

Vicom International Pty. Ltd.
66 Eastern Rd., South Melbourne, Vic. 3205
11th September, 1980

The Editor,
Dear Sir,

Vicom would like to express publicly a number of concerns relating to commercial equipment reviews in "Amateur Radio" magazine. The comments have been conveyed to the Executive of the WIA on a number of occasions and relate to the ethics and standards of conducting reviews on commercial equipment. In summary, the areas of concern are as follows —

(a) The reviews are weighted towards subjective rather than objective comment.

(b) Technical qualifications of the reviewer are not disclosed.

(c) Any conflict of interest of the reviewer is not declared.

(d) The importer is not necessarily given an opportunity to correct any mistakes of facts — either before or after review.

(e) The overall standard of the review is low, for example there are no proper technical tests, such as on the sensitivity and spurious emissions and no comparison made on a quantitative basis either to the manufacturer's specifications nor with other equipment available on the market.

It is in relation to the last-mentioned matter that I must express particular disappointment at the review of the Icom IC2A transceiver in 'AR' September 1980. It is my view that once again much of this review is of a purely subjective nature.

The reviewer makes a very incorrect assumption that a transceiver without memory and scanning is not a particularly desirable one. In this particular case, Mr. Fisher could not have been so far from fact. Our own marketing information indicates that the incredible popularity of the IC2A comes from its basic simplicity and because of its lack

"bells and whistles" area. We do not think that it is the reviewer's prerogative to make a decision on behalf of the purchaser as to whether or not it is an advantage or a disadvantage to have these features. The second issue concerns the allegation regarding the IC2A's receiver sensitivity.

Unfortunately the review did not offer any quantitative comment only a general observation completely unquantified.

As a constructive suggestion to improve the standard of reviews, I believe the reviewer should spend more time on fact, such as checking spurious emissions, sensitivity and technical performance against competitors' products and against manufacturer's specifications. He should present all the features of the unit and it should then be left to the reader to use his/her subjective judgement as to whether or not this is the equipment he should be buying.

I would support an argument that the Wireless Institute should become more involved in looking after the consumer interests of its members. In doing so, it should present a balanced, objective and professionally conducted review which would give your members some assistance in their equipment selection. Any subjective interpretation must be undertaken by the reader and not the reviewer.

I understand that other equipment suppliers are equally disappointed with the way reviews have been conducted and I must re-emphasise to the cynic that my Company is more than prepared to accept a review offering criticism of its products provided such criticisms are done in a professional, objective and responsible manner.

Yours faithfully,
Russell J. Kelly VK3NT, Managing Director,
Vicom International Pty. Limited. ■

16 Garl Street, Charleston, NSW 2290
15th September, 1980

The Editor,
Dear Sir,
My attention has been drawn to a letter in the September 1980 issue of Amateur Radio over the signature of one Arie Bles, in the course of which letter my name is mentioned.

Mr. Bles is not a member of the Institute but his letter amounts to nothing more than a scurrilous personal attack on a VK5 against whom he apparently holds some grudge. The VK5 mentioned in his letter has been a member of the Institute for many years and over the years has given honourable service to the VK5 Division in various ways. I think that it is a disgraceful state of complicated add-ons, which are in the gimmicky of affairs that a non-member should be given space in order to mount a vicious personal attack on a member.

Turning to the technical aspects of Mr. Bles's letter, I first draw attention to my extensive technical qualifications: B.E., M.I.E.E., Chartered Engineer (C. Eng.), a lecturer in electrical engineering at an Australian university for 25 years. Is there anyone in his senses who imagines that I don't know what I am talking about. Yet Mr. Bles, whose technical qualifications are hard to discover, has the brazen audacity to open up a letter by saying that "the man is completely wrong".

For years I have taken a fatherly interest in the amateur radio movement, and the affairs of the Institute in particular. My letter in the June issue was well-considered and accurate in every detail. If Mr. Bles cannot understand it because the subject matter is too difficult for him, then that is his worry. But Mr. Bles apparently opposes the dissemination of accurate technical information like this because he fears that his business interests will be affected.

To mark my extreme displeasure over this matter and the way that it has been handled I have cancelled my amateur licence and will not renew membership of the Institute. Clearly I am only wasting my time mucking about with amateurs.

Your sincerely,
Colin Yates. ■

12 Norris Road, Rowville 3178
24-8-80

The Editor,
Dear Sir,
Have just had QSO with Woody W6NEY/CCW in CW and asked him what the CCW meant. He replied "CCW is a new mode of communication, we are using computer control. Bandwidth of filter is 10 Hertz, an article will appear in November QST. Technically speaking it is synchronised pulse code modulation."

To my comment that at a bandwidth of 10 Hz it's a wonder he heard my call, he replied "CCW can be received as CW by ordinary methods, but with computer control of receiving filter, about 25 dB improvement over ordinary CW. Name Woody. Power 10 watts beaming Japan."

He was coming into this QTH at 589 and gave me a 559 report with 100 watts into a dipole.

This info sounds interesting and may be of some use to you.

Vy 73.
Don Ockley VK3BKU. ■

YOU and DX

G. (Nick) Nichols VK6XI
6 Briar Place, Ferndale, WA 6155.

There's an old saying which will be familiar to many, it goes "If it didn't come down last winter, it wasn't big or high enough." You probably think that's a weird way to start a DX article, oh well, in case you haven't caught on, my quad array now resides (like the pixies) at the bottom of the garden — a twisted mangled birdsnest of wood, wire and aluminium and steel. The cause — guy wire failure! Have you checked yours recently? Life expectancy of guy wire is only 3 years maximum.

Rumour has it that the postal pixies are at it again. **FR0FLO Herick**, believes his mail is now receiving the unwanted attention — oh the mail's getting to him but the IRCs and green stamps for return postage are noticeably absent. My only suggestion yet again is to keep the mail plain and as unobtrusive as possible.

FACT AND/OR FICTION?

The news filtering around the bands is for a major operation in late 1980 or more likely early '81 from **YI** land, rumoured call sign **YI1JY**, operation by Jordanian operators possibly **JY3ZH**, (feel the operation may well be shelved due to problems in this area of the world) — only time will tell whether this one comes off — here's hoping! Also rumoured are operations from **HC8, EA9 and M1** — no solid info, but keep your ears open.

A **9U5DS** on the bands (mainly 20m) has a really odd beam heading from here? The call sign is **legal** but operators from this country are only permitted 3 QSOs per week or risk losing their gear — if you hear this one on I suggest you do a quick count of QSOs — more than 3 it's a pirate! Whilst on "slims" also heard particularly on 10m **BV2BK** — this one is a **definite** no-no — so don't waste your breath.

For those who worked **Steve AA5AA** and the group **(N5ZV, KA5S & FR0FLO)** during August/September, you may be interested to know a total of 30,000 QSOs were made, call signs used were **3B8ZV, KA5S/3B8, 3B8ZV, AA5AA/3B8, D68XX, D68GA, FR7BP/T and FR0FLO/T** — the unexpected Trommelin activity was due solely to Steve's fortitude in outlaying $5000 for air charter from his own pocket — needless to say a token of appreciation — brown, green or whatever when QSLing to ZL1BIL would not go astray.

ON THE BANDS

[redacted]

A solid band (despite the knockers who say it is unpredictable) great S9 signals into Europe, US Central and South America, stations heard and/or worked during the month and worthy of mention **5N0DOG, 9G1TN, 9M6PW, W5JMM/SU, A35TW, FB8XY, D68GA, F0AHY/FC, PJ2KI, FO8DO, 5H3FW, VP2MX, HK0FBF, ZC4MT and C31QH.**

15 METRES

If you can get through the pile of woodchips (curse the woodpecker) another band in really fine shape most notable heard and/or worked — **HT4DX, UA1PAL** (Franz Josseph), **OA4QZ, T3AT, FO8GM, CE3CRZ, S83T, ZS3HL, W1DDV/C6A, SV0AP, VS5DD, JZ8CC, TG4NX, CX7BU, C31QH, HC8GI.** On phone and for the CW buffs K9EF/BR1 and UA1PAL.

20 METRES

Continues as ever to be a fine DX band plus or minus heavy QRM and manner (non-existent) that have to be heard to be believed. **LU3YZ, CE9AF, D68GA, ZD7HH, FB8ZO, C31MK, OJ0MA, C5ACO, 7X4MD, KC6DC, FY7AQ, W4PYH/KH8, J6LFT,** all on Phone, whilst on CW **9U5AV, FR0OZ/J, TF3DF** and **3B8AS** all had fine signals.

40 METRES

Remains in fine shape, particularly if you enjoy CW, **FB8ZO, D68XX, JZ8CC, FR0FLO/T, T3AZ, 8Q7BB,** plus solid Europe and USA paths make for a most enjoyable and reliable brass pounders paradise.

80 METRES

Rapidly improving, even for the novices with insomnia, mainly CW though — **FB8ZO, 9J2BO, H44DX, VS5RP, Ws** and good European signals really make this rag chew band worthy of more attention.

160 METRES

The band very few people (even me) bother to consider DX-wise still holds some surprises **H44DX and SW1BJ** on Phone, whilst **ZK2TW** and **Ws** on CW; perhaps the few stations mentioned may whet a few appetites — let's use it before we lose it!

That's it for the month, a good one by any standards. I'm well and truly QRT for at least a month — this column therefore will rely on contributions — can you afford 22 cents for a quick note to me if you work something interesting? I sincerely hope so.

Many thanks this month to **Allen VK2AIR, Reg VK2HM, Merelyn L20118** and **Mike VK6HD** for their valuable contributions.

73s, Nick

QTHs YOU MAY HAVE MISSED

VQ9JC — (new) PSC4, Box 17255 APO, San Francisco 96274
FB8XY — via F6CUI
W5JMM/SU — via Home Call
9M6PW — PO Box 347, Kuching
9G1TN — PO Box Tema, Ghana
CE9AF (South Shetland) — via PO Box 13630, Santiago, Chile
9U5AV — via K5VT
T3AZ — via JA1VT
8Q7BB — via JA7SGV
SV0AP — via WB7NCF
5N0DOG — via W4FRU
A35TW — via ZL1AZV
OX3CO — via WB5KGY
FB8ZO — via F6EYB
LU3ZY — via LU2CN
T3AT — via G3XZF
C31IR — via F6AUS
5N9GM — Box 1488, Kaduna, Nigeria.
A35RF — via VK3ATL.
HK0AA/AB — via HK3ODD, PO Box 584, Bogota, Colombia
KC6DC — via AD1S
A7XE — via DK3GI
OH0AM — via OH2BBM.
9Q5GB — via W7KTI
J28CC — PO Box 215, Republic of Djibouti. ■

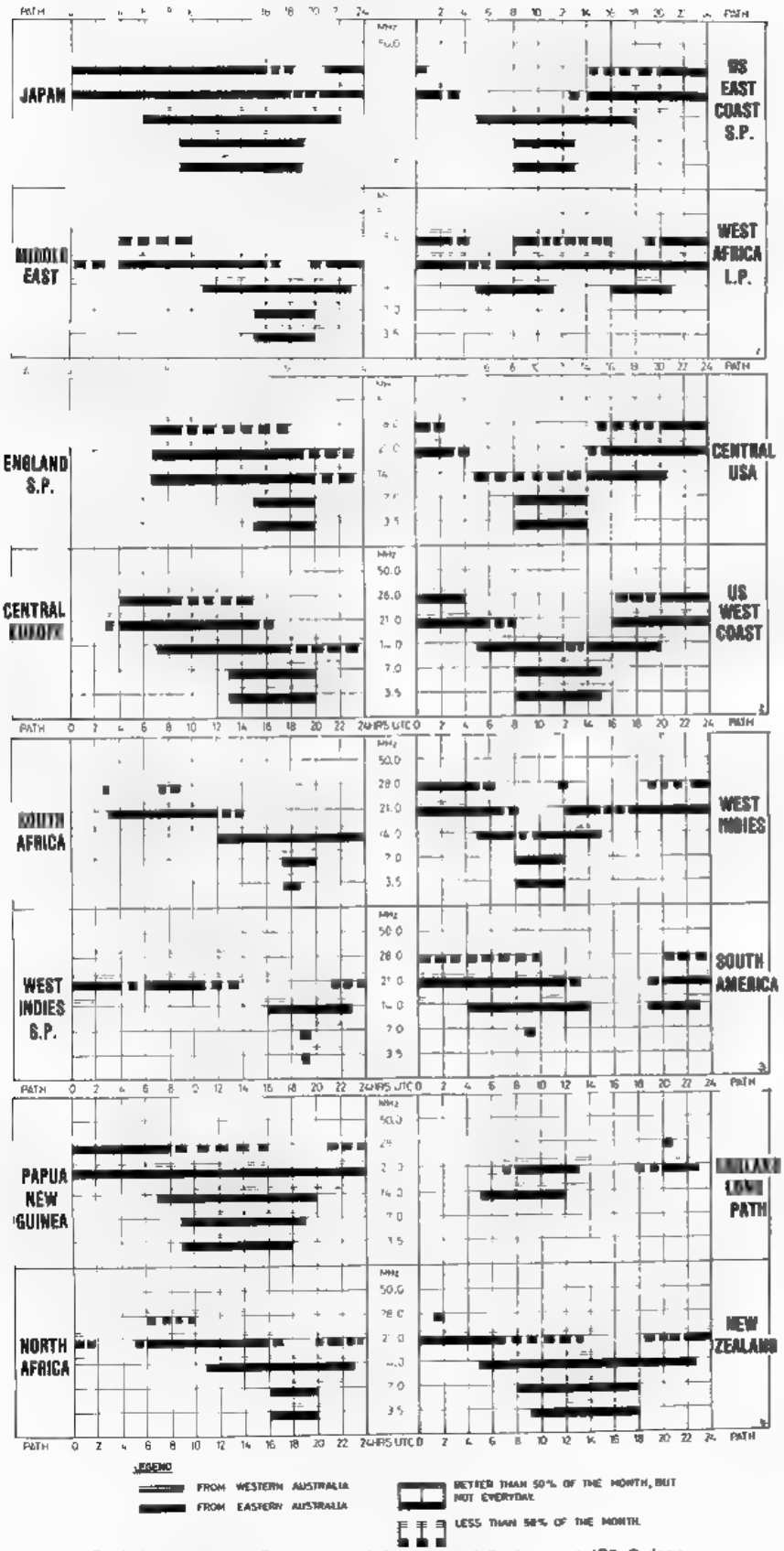
QSP

10 METRES — 1928!!

Ross Greenaway VK6DA was having some rebuilding done to his home. Underneath an old lino he found some newspaper clippings of items in "The West Australian" of September 6th and 7th, 1928, in which it was reported that on 5th September, 1928, an amateur wireless record was established in a two-way contact on 10 metres between Mr. M. Howden (then 3BQ) and Mr. H. Austin (probably 6SA). A lot has happened in 50 years. Thanks for the details, Ross. ■

IONOSPHERIC PREDICTIONS

Len Poynter VK3BYE



Predictions courtesy Department of Science and Environment IPS Sydney.
All times universal UTC (GMT).

NOTES ON THE PREDICTIONS

The mode of propagation used by IPS in compiling their predictions are reflected in the bar charts used to convert the Graflex symbols into a graphic picture

When generating the Graflex charts (reproduced in a number of publications) the following symbols are used

1. "." — Propagation is possible but probably less than 50% of the days of the month
2. "%" Propagation is possible between 50% and 90% of the days of the month
3. "F" — Propagation is possible by the first F mode on at least 90% of the days of the month unless there is a severe ionospheric disturbance
4. "M" — Propagation is possible by both first and second F modes The strongest mode is normally the first mode, but the vertical aerial pattern may influence the mode received
5. "A" High absorption, above the absorption limiting frequency but probably too close to it for good communication
6. "X" — Complex mixtures of modes including the second E mode

These are the most significant types we encounter The full lines or bars on the chart cover 2, 3, 4 taking 5 into account The broken lines or bars are depicted by 1 6 is extremely hard to verify and is not taken into account

The paths from Eastern Australia are based on Canberra The paths from West Australia are from Perth Suitable allowance should be made on Eastern paths for geographical differences Times as much as 1 hour difference between Victoria and Queensland in band openings occur Often there is no signal available in one State whereas the opposite effect occurs in the other State, they get the lot. Marginal differences produced by layer tilt and varying degrees of ionisation can be very frustrating

Generally the predictions show that time of day when the path should be open between the two areas. All other factors notwithstanding ■

MAGAZINE REVIEW

Roy Hartkopf VK3AOH

(G) General (C) Constructional (P) Practical without detailed constructional information (T) Theoretical (N) Of particular interest to the Novice

Zero Beat June 1980
(Youth Radio Clubs Scheme Magazine)
Catalogue of Constructional Ideas (GN), Direct Conversion Receiver Review (G) Memory Aid Competition (G)

CQ June 1980
Wave Propagation (G) Discone Antenna (C)

CQ July 1980
Multi-Band Linear (P) Transmission Line Transformer (G) Six Metre Log Periodic Yagi (C) Pi Network (G)

HAM RADIO June 1980
"Woodpecker" Noise Blanker (P)

QST June 1980
Beginners Look at Op Amps. (N)

HAM RADIO July 1980
Digital Rotary Dial Mechanism (electronic) (C) Yagi Antenna Design (T) Open Quad Antenna (P). Microwave Frequency Converter (C)

BREAK IN July 1980
Baudot to ASCII Converter (C)

BREAK IN August 1980
SPECIAL RTTY ISSUE

QST July 1980
Impedance Match Indicator (C) Active Filters (C)

QST August 1980
Solar Powering a Ham Station (G) Electronic Switch for a Solar Panel (GC) Weather Satellite Reception (C). ■

The Advertisers in "Amateur Radio" support the WIA member — give them first preference — and tell them so, too!

1980 Remembrance Day Contest Results

Winner — VK5 Division

Once again a record number of total entries.

Divisional participation wins the RD Contest.

Support from VK5/8 amateurs was excellent, especially in the Receiving Section.

VK6 was a close second — only 31 more full call logs of average value would have caused a change of places. Note that VK2 has moved into fifth place.

	A	B	C	D	E	F
VK1	37	175	21229	21.1	4458	354
VK2	168	2186	61136	7.7	4694	287
VK3	83	1661	51820	5.5	2857	416
VK4	106	786	72730	14.0	10198	498
VK5/8	199	758	105577	26.3	27717	341
VK6	116	497	78371	23.3	18292	512
VK7	79	202	46028	39.1	18001	390

Above columns

A — Full call logs received
B — Licences as at 31st March 1980.
C — Total points scored
D — Percentage participation full calls.
E — Trophy score from formula
F — Average log value.

The following details show the section and the points scored.

Note — Calls with the symbol * beside them entered both the Phone and CW sections, and this counts as two entries for full calls.

Results by Division in numerical order to follow.

VK1 PHONE

GB	2051	LF	415	*GM	140
JN	1631	MF	374	RK	130
*NCV	1339	*NAP	348	ZAT	129
MX	1127	TD	344	*DH	126
NAS/ ZAI	790	GW	343	RC	101
*MM	665	*BR	323	NAT	97
RP	653	DN	310	ZAA	91
DV	628	*WI	305	ZAR	83
NDA	582	NDR	301	NDJ	78
*DA	530	ZAH	227	*CC	71
NBK/ ZKL	486	RH	215	NCA	64
FM	481	*NAN	209	ZV	50
NAM	456	*FT	200	NCB	46
CB	445	*UD	199	AYL	37
		ZBJ	198	ZEJ	33
		NDI	159	KV	29

VK1 CW

*CC	952	*NAN	184	*DA	132
*DH	722	*WI	172	*GM	118
*BR	260	*FT	164	*NAP	80
*UD	216	*MM	152	NDB	60
ZV	196	*NCV	150		

VK2 PHONE

DIE	2208	*BFR	1150	VOW	801
DCL	2127	DDQ	1124	*BTZ	788
DM	1812	*DIX	1117	DDD	768
DNS	1720	*VWH	1086	DCB	714
*BO	1628	DHG	1057	DBK	669
*AUX	1362	BAM	957	BOD	635
*AOA	1226	BDT	923	*VVC	630
AHV	1192	NYL	810	ASU	622
NW	598	PN	186	*AJH	63
APE	584	VTX	182	*BLK	59
NZ	513	BRU	177	DNT	59
VEO	499	VDF	177	AZS	56
*VUT	457	*DKS	174	*DDN	56
*BSB	450	OH	173	*DGY	56
BQS	445	NYD	171	ZVN	56
DLZ	442	VPO	169	AVX	55
VAB/ YKD	436	VVU	169	VYP	55
DLH	431	BVO	160	VBX	53
*DI	413	DAV	160	*ABB	52
AGB	413	NRB/ ZCI	159	3EF/2	51
BVR	410	BXQ	157	DLG	49
EY	391	DOL	152	VMK	49
*DEW	380	NWL	148	AJO	48
WW	379	BVU	143	BWK	48
BB	371	*AZR	142	*VMY	48
YU	356	VVV	142	BXD	47
AHH	343	RU	140	GK	45
BYS	337	*BNL	134	QC	44
WT	336	AIM	132	ZK	44
VVF	331	VSP	130	DR	42
BMX	328	AJL	129	AYF	41
DCW	327	BHD	128	BAD	41
BID	318	ARZ	127	DGX	41
NJU	313	*LF	124	WIH	41
AMV	299	AKY	124	*BHO	40
VXH	299	AKH	120	PT	39
ACK	295	AGZ	118	*RJ	39
DAB	292	*IV	115	BFG	39
ASY	289	ARD	113	BUT	37
VCV	287	HZ	106	*AQ	36
VTD	274	UC	106	*JM	35
XC	248	PAO	101	XT	34
FM	243	*ALJ	97	NZW	34
BVY	242	NV	93	CU	33
DNX	229	YSU	87	YEZ	32
BIP	226	VRJ	84	*AGS	31
VA	220	*GT	81	*AQF	31
DHU	215	ZSG	78	*DBA	31
*NAW	213	AWX	77	DFC	30
AIC	209	ZZX	77	DGW	27
BCY	207	VKZ	73	DLD	24
WA	203	BQK	71	PY	22
*WE	196	*BAV	65	ZEI	21
DKP	189	*SW	64	DKT	19
				YPT	12

VK2 CW

*AQF	1032	*VVC	207	BBB	62
BAT	944	VM	176	*DBA	60
CX	826	*LF	172	*AQ	58
EL	820	*NAW	162	*DDN	58
*DGY	758	DKU	158	*AGS	56
II	510	*BLK	140	*BFR	54
SU	456	*BO	120	*DKS	54
*GT	376	*ALJ	116	*AOA	52
*DI	326	AJO	88	*DEW	52
*BHO	324	*VUT	84	*RJ	50
*BTZ	278	*SW	76	BSG	50
*WE	272	BAV	76	NR	44
*ABB	260	*JM	64	*DIX	40
*AUX	234	*BSB	64	*VWH	40
*IV	222	*AZR	63	*VYM	26
*BNL	216	*AJH	62	*VQW	24

VK3 PHONE

WP	2306	APC	1233	VPJ	663
CGR	2260	*BYN	1196	VTI	679
BHC	1906	AYF	1189	BPY	671
AQZ	1899	DML	1040	DS	668
BSH	1709	GI	1031	SZ	616
NHA	1509	BCK	911	BSR	587
ADW	1400	SM	880	ZL	572
BRM	1375	*XQ	873	VGX	525
WW	1327	ALO	734	ALK	505
*AER	491	YFZ	201	YLN	87
VKZ	481	ZY	189	BCC	84
BRD	459	CX	187	WY	81
BJM	453	ZWI	186	ZBB	77
NDT	438	ZXW	186	*BDH	76
VOL	430	AGH	172	ARJ	74
ZHP	[illegible]	OAK	158	NFC	72
LP	[illegible]	AGD	153	AMW	71
AVV	397	*BKU	143	BQB	67
BQU	[illegible]	VMB	138	KT	64
VST	[illegible]	*XB	137	CEE	56
RV	317	*AUQ	131	*AMD	55
BLO	[illegible]	4ZCO/3	116	AAJ	44
VSE	311	BLE	111	*AEW	35
VB	[illegible]	*KS	108	BZQ	36
ZYL	266	XH	105	ZIW	35
NIO	263	AL	102	*TJ	34
BPU	256	NWW/ ZOR	99	*SV	33
YRY	252	ZFI	98	YNB	30
YRN	248	BSP	223	BYA	95	*ARS	29
YRP	213	JJ	91	ARA	25
BMV	210	NIX/ ZHC	89	*BOD	21
BII	208			BYK	18
				YYQ	12

VK3 CW

*BKU	758	RJ	[illegible]	*BYN	176
KF	724	NZO	[illegible]	ANJ	166
*AEW	704	*XB	300	*KS	98
*BOD	[illegible]	XF	[illegible]	*TJ	72
DG	[illegible]	ANI	264	*AER	72
YK	504	FC	[illegible]	*XQ	62
*BDH	442	*AUQ	[illegible]	YL	58
YF	402	*SV	[illegible]	FA	36
*AMD	[illegible]	*ARS	[illegible]		

VK3 RECEIVING

L30042 E Trebilcock (CW only) 864

VK4 PHONE

YS	3165	VBG	671	QA	269
NOO	2742	YT	660	*GH	261
LP	2736	ACC	640	NJV/ ZJV	260
LT	2580	AG	636	*WT	230
AMB	2557	VBD	633	NXJ	198
*LG	2445	NTE/ ZJP	602	CO	194
UX	2156	NIK	589	LE	190
QO	1935	NZW	580	AEM	189
AOH	1802	BG	520	*UG	164
NPL/ ZMZ	1774	NVG	506	FK	160
ACT	1475	2RP/4	431	VCI	155
KD	1421	FX	419	TS	149
PS	1419	NLL	418	*ABM	149
AEV	1389	VDF	413	ADC	142
LJ	1325	DY	400	ZN	140
NOY	1099	VI	397	HB	133
AGL	1042	EH	383	VCE	125
NWH	1042	AAU	370	ZBV	125
NFR/ ZEZ	1040	*DT	347	ADW	119
*YG	948	VCQ	343	NS	118
RT	943	PJ	337	VFN	114
NAU	897	NWJ	335	ABY	113
JG	835	NJI	323	NTJ/ ZTJ	107
FN	833	IZ	322	XN	100
NHO/ ZMQ	828	NXK	309	ASP	97
IR	816	CZ	306	HM	93
KW	816	NKP/ ZNI	296	NFU	92
APA	799	NJC/ ZBL	295	LA	90
OX	781	FC	292	AGZ	87
*AMH	745	QH	289	NDX/ ZXD	86
AAK	735	ANZ	287	CJ	84
ZV	726	VCJ	285	GT	70

APG	70	AMO	51	PR	36
QF	67	EC	50	WIZ	31
*ACZ	67	*LZ	47	AGS	28
NXB/ ZBS	64	*OD	46	HZ	26
*UA	58	NNV	44	VS	20
ZH	56	MU	42	ZSD	18
ABX	54	YN	41	VCH/ ZKK	15
CD	51	NHS/ ZVJ	37	XZ	13
LF	51				

VK4 CW

XA	1848	CJ	214	*UG	100
*GH	642	VEH	214	*DT	88
*UA	520	OK	200	*YG	88
XY	478	XJ	196	*LG	76
SF	332	*ACZ	170	*LZ	58
NRZ	294	NJ	[illegible]	*AMH	37
*ABM	266	HK	118		
*WT	230	*OD	112		

VK4 RECEIVING

L40877	S. Philpot	751

VK5 PHONE

*QX	2417	NLV	449	RX	214
ATA	1883	NEK	448	OF	211
MM	1731	NAJ	441	KV	210
*ARC	1671	ZRO	426	NRT	208
LP	1491	WV	425	*FX	207
AGO	1327	AVE	425	ARV	204
XZ	1318	NNH	420	PS	196
NX	[illegible]	PP	412	HQ	192
ZZ	1239	*YO	406	ZB	189
ZI	[illegible]	AJJ	405	NDX	187
DI	1133	VG	404	ZEA	182
APH	1001	NNC/ ZNC	398	*RK	180
TS	981	AWV	395	ABS	177
SH	[illegible]	NFZ	389	ZTA	176
*ADD	911	ND	388	WF	174
TZ	889	NTU	386	ZLH	173
NN	882	UH	379	APL	172
QV	884	T	377	BP	170
NWK	861	YX	369	QI	170
ASA	827	ZJE	368	KH	169
AIC	820	NPC	361	NEE/ ZTR	169
AM	807	AWM	359	KN	165
UB	805	NDG	357	YU	164
GR	780	ZCM	357	NSN	164
ATW	761	ZCF	353	*ZK	162
NFT	740	*MX	351	TW	161
*FH	701	NCE	351	NSI	160
SN	699	NVW	346	NFL	157
UI	692	NDU	342	NSU	153
AKA	689	NHM	336	ARU	150
AMW	681	UU	335	NMS	150
UW	650	FT	332	YS	149
*NVR	641	ZTY	332	ZDJ	145
FK	627	NCY/ ZMF	328	KX	141
*NLC	605	NJH	600	OC	138
VT	582	DJ	319	NHO	134
ATM	556	NFY	309	AQ	130
SS	553	OZ	308	OL	130
NOF	549	AKS	299	NEG	129
FO	545	NTK	291	*IO	126
SU	540	FL	289	BF	123
NTB	539	AGW	288	NON	123
XE	537	NDE	278	XC	122
NXQ	535	JM	275	KG	119
EA	533	LL	273	NGP	118
AJW	528	NEI	271	GF	117
NOD	525	SG	269	AJG	117
ABC	521	TY	269	JK	116
NFI	521	*IF	267	NSP	115
NRN	520	LQ	263	ZBC	113
*NLS/ ZSB	519	NGC	262	WN	110
ANW	516	NCK/ ZAA	257	CH	108
LN	504	NTC	252	ADC	107
NUB	501	ACE	250	ZJJ	107
NTE	495	NWW	250	ABD	106
*NKP	493	NEH	235	EF	103
ADY	469	VE	231	FA	103
NDW/ ZDD	460	AJS	230	GL	103
ST	459	AVQ	230	ABW	103
NWT	451	RC	221	ALW	103
		SE	221	ZFH	101
MS	100	NJT	81	ZPE	40
ZAL	100	RQ	80	*FM	39
*AKW	99	HM	78	*ARA	38
YV	95	BXG	76	NQD	37
ABY	95	NMX	73	*RT	33
ZQ	94	ZAP	73	UE	33
NLI	93	BI	72	*NJE	33
ZKK	91	NOC	68	NRQ	33
*OU	90	OT	67	ZEA	33
ZE	90	ZMN	66	YQ	31
NES	90	*WC	64	*ALE	31
NRA	90	ZBD	62	AKC	30
NTT/ ZTN	90	AC	60	NKW	30
DQ	88	ZTJ	57	*PX	29
NHK	87	XT	55	NDP	28
NFN	85	YW	52	ACA	24
EQ	84	ALM	50	BPT	24
DF	82	ZSV	48	ZAR	21
KR	82	*IX	44	*TL	15
ZIS	82	*UX	44	DC	12
*FD	81	CA	41	VY	12
*ZW	81	ZU	41		

VK5 CW

UM	1154	KU	184	*WC	72
OR	1126	QR	178	*PX	66
BN	990	QI	156	*AKW	64
*FH	610	CV	140	*IO	62
*NJE	513	AU	130	KL	56
NRG	384	*NKP	130	*MX	56
*IF	348	*RT	108	*QX	56
HO	342	*ZK	108	*UX	54
*ARA	326	*FD	92	*ALE	54
*FX	324	*ZW	90	*ARC	54
*NLC	310	HI	88	*OU	50
FY	272	*YO	88	*NVR	44
NEP	268	*ADD	84	*IX	42
*TL	198	DL	78	*RK	36
NBZ	196	*FM	76	*ZSB	20

VK5 RECEIVING

L50711	J. Scriven		2210
	R. Wilford		2049
L50550/L50534	G. Williams-J Murray		2001
L50428	T Moore		1769
L50519	A. Strickland		1045
L50520	G Petersen		787
L50340	R. Cunningham		699
L50087	R. Chester		416
L50122	R. Edmeades		29

VK6 PHONE

XI	3388	WL	516	ZS	170
ANW	3219	*RZ	482	NCQ	165
PD	3189	SH	454	NPM	165
YL	2878	NSS	453	ZLT	164
*MN	2634	MB	412	NE	161
NBU	2595	*VK	412	ML	158
KG	2535	TP	403	YS	151
RG	2522	NFA	403	*EO	144
HA	2168	HU	401	*WZ	137
MF	2161	NHY	395	ZH	134
*FS	2161	NGX/ ZHR	388	NXL	131
NHX	1620			XO	127
*JS	1413	NDK	387	ZFB	119
NHA	1305	TX	381	YR	109
ABR	1285	NST	378	MU	101
*ED	1250	ZD	377	PW	100
NLD	1098	*PF	365	SO	100
FE	919	ZZ	364	AT	95
IH	908	UX	337	EJ	95
NGK	779	YE	336	IF	95
IC	777	DV	308	TU	93
YF	768	NPL	304	ARX	87
AN	767	AD	286	AV	85
GL	764	TO	251	WG	84
RO	759	ZIT	246	DC	75
NLZ	756	HX	236	ZT	74
*XN	695	QR	233	GA	71
NGR/ ZGH	670	RV	225	ZKI	64
		UH	221	NGO	60
NAT	665	YG	221	*HD	59
NWA	652	ZGA	199	XX	57
SP	647	RW	192	*RU	51
*FC	618	DM	190	NTZ	49
KY	575	QQ	188	CD	48
CR	540	MM	173	BE	43
HK	42	AWI	25	DZ	17
WI	41	ZAG	25	ZGY	16
*CO	38	ZGE	24	ZHU	15
*ZC	37	ZLN	23	WV	14
EB	30	*HQ	21	ZDR	12
*NQ	28	*XY	20	JY	10
ZRG	28	*SR	19	PX	10
XD	27	UV	18		

VK6 CW

WT	1658	*VK	164	*HD	73
*HQ	1514	*WZ	160	*FC	68
*RZ	618	*JS	158	*EO	30
*XN	490	*PF	146	*XY	30
AJ	466	SM	138	*ZC	30
*ED	294	*RU	128	*SR	26
*CO	288	*FS	114	*NQ	20
RS	198	*MN	88		

VK6 RECEIVING

L60035	P	Dean	2372
L60078	D	Robson	2098
	M	Diggens	1300
L60228	G	Mann	763

VK7 PHONE

KZ	2052	DT	416	NDR	125
NW	2006	NFF	415	ZJG	123
KC	1642	DG	396	*RY	116
*HK	1239	NHA	396	*CF	116
*EA	1226	GS	391	MP	109
RR	1163	KH	376	WI	104
*NB	1147	NSA	347	DL	98
NWR	1115	BM	339	ZOT	96
DX	1074	*AK	338	NXJ/ ZXJ	93
JV	1070	NPK	325		
*VH	999	*AL	324	KK	83
*PV	947	EB	320	ZLB	81
NDP	780	RM	312	NBC	73
BF	760	SF	308	ZXB	69
NPL	751	LJ	301	NNN	58
BP	749	NFR	288	KS	57
*RP	742	NOB	258	ZAT	57
JT	731	NOB	253	LS	56
*NPJ	672	MX	237	ZIE	54
JU	664	NAC	229	*SB	49
MM	664	*JG	228	NGG	47
NKD	648	NOW	227	BQ	43
NXB	638	YY	225	ZK7	42
BH	494	ZTA	215	AX	36
*GD	476	CT	214	ZSU	34
NHT/ ZXX	474	KJ	211	ZLD	32
		SQ	199	DJ	31
NDY	473	*LZ	188	ZBL	30
MF	468	NWS	186	ZDF	27
*GM	466	*SJ	133	BA	23
DK	436	MG	130	SS	11
NPS	426	*NRT	130		

VK7 CW

CH	1086	*NPJ	172	*PV	48
MC	1028	*LZ	112	RQ	46
*RY	648	*AK	108	*SB	32
ZZ	630	*AL	102	*EA	30
ZO	428	*NRT	98	RK	28
MZ	368	*RP	82	*GD	26
*GM	288	*JG	82	*HK	26
*NB	278	*VH	70		
*CF	218	*SJ	68		

VK7 RECEIVING

L70107	G Mutton	2289

VK8 PHONE

*DA	1113	NRI	561	*BE	123

VK8 CW

*DA	304	HA	278	*BE	80

ZL PHONE

1AGO	1034	2AJB	254	2MM	160

ZL CW

9LS	4817	*9NBF	1186	*9EJ	627

ZL CW

*9EJ	434	*9NBF	102

CHECK LOGS

VK2DNX, VK2VMX, VK4PJ, VK4ADC, VK4NBP, VK5SU, VK6GA, VK7BH.

COMMENTS BY FEDERAL CONTEST MANAGER

What a friendly contest it was. Meeting old friends and also making new ones. The Minister's announcement at the start of the contest certainly made one feel that amateurs were not forgotten.

It would appear that unnecessary power in the Novice sections by full calls was not appreciated. Next time how about giving the little blokes a better go?

A log was received from Roy VK5AC, who passed away shortly after the contest. Born in 1899, he was active right up to the very end.

The comments on logs this year were full of praise for the happy and friendly nature of the contest, although one entrant bitterly complained that his rig blew up after a few hours and he had to withdraw.

EXTRACTS

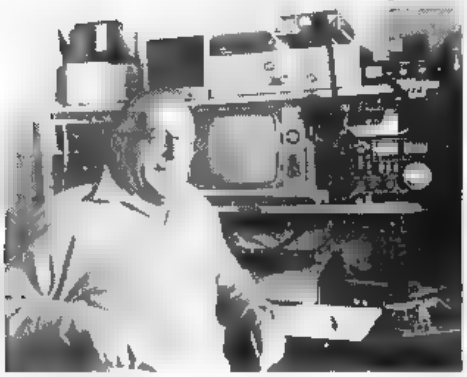
"Had a great time in the contest" — VK7. "To those amateurs who made the supreme sacrifice, I think the contest is an excellent way of remembering them" — VK3. "This year's contest was a lot of fun. It certainly deserves the title of the friendly contest" — VK3.

This is my last 'RD' contest as my term finishes next June, and I have enjoyed it very much. A dining room full of letters and then spread out logs has been accepted by my wife, Dorothy, as her contribution to amateur radio. Perhaps we can now have a decent dinner party at home.

See you next year in the "RD" on the 15/16th August, 1981. ■

CONTESTS

Wally Watkins VK2DEW
Box 1065, Orange 2800



November

8/9	EUROPEAN RTTY
8/9	INTERNATIONAL POLICE CONTEST
9	CZECHOSLOVAKIAN CONTEST
15	DARC 10 METRE RTTY
15/16	AUSTRIAN 160 METRE CONTEST
15/17	ARRL PHONE
29/30	CQ WW DX CW CONTEST +1

December

6/11 January	ROSS HULL MEMORIAL CONTEST
6/7	SPANISH PHONE CONTEST
6/7	NATIONAL VHF CONTEST +2
6/8	ARRL 160 METRE
13/14	SPANISH CW CONTEST
13/14	HUNGARIAN DX CONTEST
13/14	ARRL 10 METRE CONTEST
28	CANADA PHONE AND CW CONTEST

January

Up to 11	ROSS HULL MEMORIAL CONTEST
17/18	2ND ANNUAL INTERNATIONAL 160 METRE PHONE

February:

7/8	JOHN MOYLE MEMORIAL CONTEST
7/8	RSGB 7 MHz PHONE

+1: CQ WW CW logs to NSAR Rock Ridge Terr., Canoga Park, CA 91307 by 15-1-81

+2: Nat. VHF logs to Geelong ARC, Box 520, Geelong 3220

Various rules sent by return mail — SASE to FCM

FROM VARIOUS RESULT SHEETS

1979 **CQ WW PHONE** 21 MHz VK4VU third world score

1980 **Commonwealth Contest:** Received Rose Bowl — E W Trebilcock BCRS 195.
Band leaders overseas 7 MHz **VK3APN**; 14 MHz **VK6AJ**

CANADA CONTEST

The Canadian Amateur Radio Federation is pleased to announce the Canada Contest.

Time

0001-2359 UTC on 28 December, 1980.

Open to all amateurs, everybody work everybody, 160 to 2 metres. CW and Phone combined.

Classes of entry:

Single operator all band, single operator single band, multi operator single transmitter all band.

Contacts

All contacts with amateur stations are valid. The same station may be worked twice on each band, once on CW and once on Phone. No cross-mode contacts and no CW contacts in the Phone bands allowed.

Exchange:

Signal report and consecutive serial number starting with 001. VE1 stations will also send their province (NS, NB, PEI).

Scoring

10 points for each contact with Canada. 1 point for each contact with others. 10 bonus points for each contact with any CARF official news station using the suffix TCA or VCA. Multipliers are the number of Canadian provinces/territories worked on each band and mode. (12 provinces/territories x 8 bands x 2 modes for a maximum of 192 possible multipliers.)

Provinces/territories:

VO1/VO2, VE1-NB, VE2, VE3, VE4, VE5, VE1-PEI, VE1-NS, VE6, VE7, VE8, VY1

Frequencies:

Phone 1810, 3770, 3900, 7070, 7230, 14150, 14300, 21200, 21400, 28500, 50100, 146520.
CW 1810, 3525, 7025, 14025, 21025, 28025, 50100, 144100

Times:

Suggest Phone on the even hours UTC, CW on the odd hours UTC.

Entries:

A valid entry must contain log sheets, dupe sheets and a summary sheet showing a chart of multipliers per band/mode and score calculation. Send your entry with comments to Canadian Amateur Radio Federation, 203-1946 York Avenue, Vancouver, BC Canada V6J 1E3, postmarked before 15 January, 1981.

Awards:

The CARF Canada Contest Trophy will be awarded to the highest scoring single operator entry. Certificates will be awarded to the highest score in each entry class in each province/territory, USA call area, and DX country, and to the highest score from a Canadian non-Advanced Amateur (no Phone on 3.5-21 MHz) and where participation warrants.

Results:

Results will be published in TCA, the Canadian amateur magazine. Non-subscribers may include an SASE for a copy of the results. ■

COMMONWEALTH CONTEST 1980

Conditions, as far as this part of the world was concerned, were a great improvement on anything experienced for many years, and showed that as late as March anyway, Sunspot Cycle 21 was still on the way up. Increased activity was recorded on 21 and 28 MHz and consequently the leading VK score were well up on 1979.

However, the total number of logs submitted was only one more, at 127. Australian entries again increased, to 43, while there were 51 from the UK, 15 VEs, but only 5 ZLs. The "Outposts of Empire" seem to be making a comeback, as ZB2, ZD8, ZE, C5 and 5B4, among other exotic prefixes, also appear in the results.

Scores of the leaders, as of the three top VKs, seem to have increased by about 500 points on those of last year, but our placings slipped to 15, 18 and 23 as against 12, 14 and 19 previously. The general opinion locally was that it was a good contest all round.

The leaders were:—

1.	VE7CC	7293	5.	VE5RA	5891
2.	9H1EL	6734	6.	G3MXJ	5679
3.	G3FXB	6112	15.	VK4XA	4813
4.	G3FPQ	5892			

RECEIVING SECTION

1	Eric Trebilcock BCRS195	3435

AUSTRALIAN SCORES

15.	VK4XA	4813	91.	VK3FC	1200
18.	VK2BPN	4750	92.	VK5KL	1145
23.	VK3MR	4268	93.	VK2GT	1130
37.	VK7BC	3140	96.	VK3YL	1090
39.	VK3ZC	3105	98.	VK1UD	1025
44.	VK2AQF	2920	100.	VK3KS	1018
49.	VK2GW	2600	105.	VK5HO	813
52.	VK3AEW	2523	107.	VK5RG	795
53.	VK3XU	2320	109.	VK3BDH	670
58.	VK7RO	2273	109.	VK5RU	670
60.	VK3YK	2120	111.	VK1GG/2	665
62.	VK3RJ	2055	112.	VK4XJ	640
66.	VK7CH	1770	113.	VK1SL/2	635
69.	VK7RY	1660	114.	VK7ZO	540
71.	VK5AJ	1643	115.	VK5RZ	510
76.	VK3VF	1570	117.	VK2BDU	455
78.	VK4LV	1530	119.	VK3ABA	380
80.	VK3XX	1490	123.	VK4SF	266
83.	VK6FS	1470	124.	VK3SV	250
84.	VK3XB	1465	125.	VK3CT	240
89.	VK5BS	1260	126.	VK3AMD	125
90.	VK3APN	1210			

Single band entries among the above were —

7 MHz — VK3APN, Overseas leader
14 MHz — VK6AJ, Overseas leader
21 MHz — VK3ABA
28 MHz — VK4XJ VK4SF

Other Pacific Area results —

9	5W1BZ	5383	63.	ZL1AMO	2027
13.	ZL2BR	4960	65.	P29EJ	1879
28.	ZL2TX	3885	66.	8V1TL	1430
57	ZL1HV	2270	101	ZL2MM	1010

AUSTRALIAN AWARDS

The Silver Medallion for the leading VK entrant was won by Russ Colston VK4XA.

The Bronze Medallion for the VK middle placing was won by Peter Nisbet VK3APN.

HOW THE LEADERS MADE THEIR SCORES

QSOs/Bonus Areas per band, 80 to 10.

VE7CC	16/15	101/49	204/45	177/42	170/52
9H1EL	39/12	92/22	189/53	156/44	220/36
9H1EL	39/12	92/22	189/53	158/44	220/36
G3FXB	10/10	81/35	152/38	207/40	108/45
VK4XA	8/7	32/25	130/49	117/41	57/34
VK2BPN	15/12	47/36	104/41	98/37	44/37
VK3MR	21/18	57/38	125/28	62/35	30/21

A comparison between these two groups of scoring details tends to indicate that our (VK) best hope for increased scores is more activity on our own continent. A remark by 5W1BZ, "Real thrill to work VP8AI on five bands back to ZL for 1981", shows what can be worked if one is in the right part of the world!!

RSGB COMMENTS

The sunspot maximum years continue to produce conditions which favour stations in the northern hemisphere. Many entrants commented on the good conditions on all bands between Canada and Europe, and on the problems affecting contacts between these areas and Africa, Australia and New Zealand.

With a total of 668 contacts and 203 bonuses Les Sawkins VE7CC retains the Senior Rose Bowl for a second year. The Junior Rose Bowl remains in Europe going to Jeff Morris 9H1EL who amassed 695 contacts, the highest total of any entrant. Alf Slater G3FXB keeps the Co. Thomas Rose Bowl yet again (his eighth successive win) and after some years absence G3FPQ returns to the tables in fourth place overall.

Without doubt the key to the Commonwealth Contest is bonus points, and those obtained on the lower frequency bands seem to achieve special importance. It is interesting to compare the way in which stations in various parts of the world assembled their scores. Analysis of the winner's log reflects the excellent openings to Europe that enabled VE7CC to build up his score. The 28 MHz band produced 112 contacts in 4.5h, and 14 MHz 130 contacts in 5h. For the Europeans who spent much of the night scratching for extra bonus points, VE7CC's lower frequency bands list makes interesting reading, especially on 7 MHz where he worked VK2, 3, 4, 5, 6, 7, ZL1, 3, 5W1, VP9, ZD8, C5 and VP8.

The leading UK stations consolidated their positions with considerable emphasis on the lower frequency bands. Both G3FXB and G3FPQ used fixed multi-element beams on 7 MHz a factor which may well have been worth more on reception than on transmission. The choicer prefixes appearing in their logs for the band included VE1, 7, VP8, VP9, VK2, 3, 4, 7, ZD8, ZK1, ZL1, 2, 3, 5B4, 5W1 and 8R1. Several G stations including G3FPQ, took advantage of the early evening short-path opening to VK on 3 MHz. G3FPQ's bonus list for this band includes C5, VE1, 2, 3, VK7, VO, ZB2, ZD8, ZL2, 4 and 9H1.

9H1EL seems to have successfully resisted the temptation to merely work the always adequate supply of UK stations available on all bands, and he ensured a sufficient supply of bonus points to push himself into second place overall.

Examination of the VK/ZL logs shows a somewhat different perspective of the contest. VK4KA's log for 7 MHz shows that the bulk of activity took place during the Australian early evening period between 0600 and 1030 GMT with openings to the mid-Pacific. VE1, 4, 5 and 7. This tendency to lower frequency bands operation in the evenings (as opposed to the bulk of European activity during the night) is reinforced in the logs of ZL2BR and ZL2TX.

In the single-band sections the only band attracting any significant number of entries was 14 MHz. Overseas, VK6AJ had 127 QSOs and 51 bonuses to give him top place, while at home G3PVA's FT101Z and 2 el quad produced 100 QSOs and 57 Bonuses. The overall single-band leader was ZL1AMO, who scored 301 contacts and 56 bonuses to give him the lead on 21 MHz.

Eric Trabilcock BCRS195 in his 39th "BERU" comes out top this time in his yearly rivalry with Ron Thomas BRS15882. Eric found 163 stations with 131 bonuses against Ron's 167 and 120.

Comments concerning the rules in last year's write-up produced a considerable amount of reaction. The overwhelming feeling is that the rules should be retained in their present form. It is clear that much of the attraction of "BERU" is its uniqueness as a contest — the need for something more than sheer quantity of contacts and the test of the overall station and operator. Equipment, antennas, propagation knowledge, experience and of course stamina, are tested to a level not reached in many events. There are no plans for any rule changes in the immediate future. Needless to say comment on any aspect of the contest is always welcome.

G5WP

It would be inappropriate to close without noting the death of "BERU" stalwart "Rusty" Russell G5WP in May, 1980. Rusty, perhaps the most consistent "BERU" entrant ever, will be particularly remembered for his lower frequency band operations. He was the only UK station since the war to win the "BERU" Rose Bowl. His signals will be missed.

BERU 1981

1200Z Saturday, 15th March, to 1200Z Sunday, 16th March, 1981. ■

RULES FOR THE 1980-81 ROSS HULL MEMORIAL CONTEST

OBJECTS

Australian amateurs will endeavour to contact as many other amateurs as possible. Entrants must operate within the terms of their licences.

PERIOD

0001Z 6th December, 1980, to 2400Z 11th January, 1981.

EXCHANGE

RS(T) plus a three figure serial number starting at 001 and increasing by one for each contact, when 999 is reached a start is made again from 001.

BANDS

All amateur bands above 30 MHz, however cross band contacts are not permitted. Operation via active repeaters and translators is not allowed.

OPERATOR

Single operator only. One transmission only at one time.

CONTACTS

Two contacts per GMT day per band with each station providing 10 hours have elapsed since the previous contact.

DURATION

(a) 7 GMT days — not necessarily consecutive.
(b) 2 GMT days consecutive.

SECTIONS

(1) Phone (AM, FM, SSB, ATV and SSTV).
(2) CW (CW and RTTY).
(3) Receiving (any mode).

LOG SHEET

It is desirable that complete logs for the whole contest be submitted for cross checking purposes, photo copies are very acceptable.

The following details must be shown. Time GMT, Band, Emission, Stn worked, Tx exchange, Rx exchange, Points, Bonus. Each page must be totalled at the bottom.

FRONT SHEET

A front sheet must be attached showing the following information in this order.

Section, call sign, list of 7 best GMT days with daily score and day multiplier, daily total plus 7 day total, list of best 2 GMT days with daily score and day multiplier, daily total plus 2 day total, name and postal address.

SCORING TABLE — AUSTRALIA

Distance	52	144	432	576	1296	2304 up
Up to 100 km	1	2	6	20	30	50
100-200 km	2	5	10	30	75	100
200-400 km	10	20	40	60	100	200
400-800 km	20	35	60	75	150	300
Over 800 km	10	50	80	100	200	500

BONUS

(a) For each new call area in Australia, including own call area, 20 points once only per band per GMT day.
(b) For each prefix worked outside Australia, 40 points once only per band per day.

SPECIAL VK6 BONUS

VK6 stations only shall double the final daily score.

MULTIPLIER

All stations shall multiply the GMT day score, including the Bonus (a) and (b), by the number of bands used for scoring during that day.

SCORING TABLE — OVERSEAS STATIONS

52 MHz — 50 points; 144 MHz — 100 points, 432 MHz 200 points. For contacts with Australian stations only.

AWARDS

A perpetual trophy is awarded annually for competition between members of the Wireless Institute of Australia. The winner's name is inscribed on the trophy and he receives a suitable certificate. The entrant with the highest score in either the 7 day or 2 day division will be the winner and his division will hold the trophy for one year.

Certificates will be awarded to the highest score in both the 7 day and the 2 day divisions. A winner of a 7 day certificate cannot be awarded a 2 day one as well.

Overseas entrants will be awarded certificates on the same basis, one for each call area.

SUBMISSION OF LOGS

Entries are to be sent to the FCM, Box 1065, Orange 2800, and postmarked no later than 2nd February, 1981, and endorsed "Ross Hull Memorial Contest".

RECEIVING SECTION

Logs must show the same information as a transmitting log except for the second number exchanged. If both stations are heard both can be claimed but on separate lines of the log. Scoring will be as for a transmitting log.

Any scoring contacts can be logged, there is no limit to the number of times that one station can be logged.

The decision of the FCM is final and no correspondence will be entered into. ■

SECOND ANNUAL INTERNATIONAL 160 METRE PHONE CONTEST

Sponsored by:

73 Magazine, Peterborough, New Hampshire 03458.

Contest Period:

0000Z January 17, 1981 to 2400Z January 18, 1981.

Object

To work as many stations as possible on 160m Phone in a maximum of 30 hours allowable contest time. Multi-operator stations may operate the entire 46-hour contest period.

Entry Categories

(1) Single Operator, Single Transmitter Phone only.
(2) Multi-Operator Single Transmitter, Phone only.

Exchange:

Stations within the Continental US and Canada transmit RS report and State or Province respectively. All others transmit RS report and DX Country.

Points

All valid two-way contacts score five (5) QSO points. A station may be worked only once for contest credit.

Multipliers:

1 Multiplier Point — each of the Continental US States (48 max mum).
1 Multiplier Point — each of the Canadian Provinces (13 max mum).
3 Multiplier Points — each DX Country outside Continental US and Canada.

Final Score:

Total QSO Points times total Multiplier Points equals Claimed Score.

Contest Entries:

Each entry must include log sheets, dupesheet for 100 or more contacts, a contest summary sheet and a multiplier check list.

Entry Deadline:

All entries must be postmarked no later than February 21, 1981.

DX Window:

Stations are expected to observe the DX Window from 1.825-1.830 MHz as mutually agreed by Top Band operators. Stations in the US and Canada are asked not to transmit in this 5 kHz segment of the band.

Disqualifications:

Disqualifications may result if contestant omits any required entry forms, operates in excess of legal power authorized for his given area, manipulates operating times to achieve a score advantage or fails to omit duplicate contacts which reduce the overall score more than 2 per cent.

Awards

Contest awards will be issued in each award category in each of the Continental US States, each Canadian Province and each DX Country.

Contest Address

To obtain information, entry forms or to submit a contest entry forward an SASE to:

Dan Murphy WA2QZB,
PO Box 195,
Andover NJ 07821, USA. ■

AMATEUR RADIO IS A RESPONSIBLE SERVICE

LET'S KEEP IT THAT WAY

AWARDS COLUMN

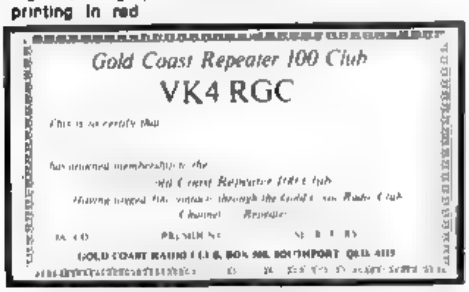
Bill Verrall VK5WV
7 Lilac Avenue, Flinders Park, SA 5025

GOLD COAST AWARD

The Gold Coast Amateur Radio Society offers two awards, the qualifying requirements for which are as follows

The applicant must submit an extract of his log documenting contacts with not less than six (6) Gold Coast Amateur Radio Society members, one of which must be the Society Station VK4WIG. Any mode and any frequency may be used and the contacts may be made over any period of time.

This award measures 250 mm x 200 mm featuring a photograph of the Gold Coast in blue with printing in red


Gold Coast Repeater 100 Club
VK4 RGC

GOLD COAST REPEATER 100 CLUB

To qualify for membership and the award the applicant must submit an extract of his log documenting not less than one hundred (100) separate contacts with Gold Coast Amateur Radio Society member stations via the 2 metre or 70 cm repeaters. Contacts with the same station at intervals of less than seven (7) days will not be credited for this award

This award is QSL card size printed on gloss — card colour yellow, with printing in black with surround and callsign in red.

Applications for these awards should be sent to Awards Manager, Gold Coast Amateur Radio Society, P.O. Box 586, Southport, Qld., 4215. The Society has not mentioned a fee, but I suggest that you include sufficient to cover return postage of the award

The Society also has an awards programme for Ten-Ten International members and this will be described in a later issue

WIO (WORKED INDIAN OCEAN) AWARD

This award is offered by the Australia-Chapter 66, of the International Certificate Hunters Club for working stations in and around the Indian Ocean.

RULES:

1. Work 10 (ten) countries bordering the Indian Ocean plus 5 (five) Islands within the Indian Ocean
2. QSLs are necessary but should not be sent with the application unless requested by the Custodian
3. Note Heard Island and Kerguelen Island are in the Southern Ocean and NOT the Indian Ocean. Lesotho-7P8 and Swaziland-ZD5 (3B6) are land locked and are not acceptable for this Award.
4. Cost $3.00
5. Applications should be sent to the Custodian, VK2AIR, 111 Northcott Road, Seven Hills, NSW 2147

The following are the acceptable islands.

Christmas Island VK9, Andaman Islands VU5, Laccadive Islands VU4 or VU5, Socotra Island VS9, Seychelles VQ9 or S7, Agalega Island 3B6, Comoro Island FB8, Rodriguez Island 3B9, Reunion Island FR7, Juan de Nova FR7, Timor (deleted country) CR8, YB, 8F, New Amsterdam Island FB8, Cocos Islands VK9, Nicobar Islands VU5, Maldive Island 8Q6, Chagos Archipelago VQ9, Glorioso Island FR7, St. Brendon Island 3B7, Mauritius 3B8, Zanzibar (deleted country) VQ1, Prince Edward and Marion Islands ZS2, Crozet Islands FB8, St. Paul Island FB8, Tromelin Island FR7

Any other islands within the Indian Ocean boundaries specified and officially accepted by the Wireless Institute of Australia and the ARRL will be accepted for this award.

The award measures 300 mm x 245 mm, printed on light green matt card with darker colours for the edging and map outline and certificate details in dark green.

Good Hunting. ■


INTERNATIONAL CERTIFICATE HUNTERS CLUB

Australia-Chapter 66

AFFILIATE OF THE INTERNATIONAL AMATEUR RADIO SOCIETY

W.I.O.

AWARDED TO

SPECIMEN COPY


Gold Coast Award

This Certificate, Number

Awarded to

Secretary

QSP

5 MHz BAND — USA

From 14.7.1980 US amateurs were permitted to use standard bandwidth FM voice mission in the 6m band segment 50.1 to 52.5 MHz. Previously this was allowed only above 52.5 MHz. Repeater inputs and outputs are not permitted below 52 MHz but ARRL strongly urged FM operators to avoid using frequencies between 50.1 and 51 MHz and also just above 51.0 and 52.0 MHz when propagation is possible to New Zealand and Australia.—QST August 1980. ■

DIVISIONAL NOTES

VK2

BLUE MOUNTAINS FIELD DAY

Sunday, 20th November, 1980 is the date to set aside for the Blue Mountains Amateur Radio Club Field Day.

This worthwhile event in the clear air of the mountains gains in popularity each year, last year there being 250 people who popped in to take part in events or simply browse through the exhibits.

The Field Day is conducted in the grounds of the Springwood High School which is situated on the corner of Grose Road and Chapman Parade, Faulconbridge. Grose Road runs off the Great Western Highway just a few kilometres on the Katoomba side of Springwood.

As the exhibitors' areas is under full cover, with ample space the show goes on hail, rain or shine.

In addition to exhibits, events such as scramble, fox hunts (mobile and pedestrian), ladies radio throwing contest, etc., will be run, together with a raffle and auction.

If you are not going to register for competition in events there is no fee for entry to the exhibition area. Competitors will be provided with free tea and coffee.

Those liking more information or those who would like to exhibit are invited to contact **Peter Willis (047) 39 2203, Geoff Swift (047) 39 1144, Terry Ryeland (047) 39 2551 or John Belshaw (047) 39 3615 AH (02) 237 3707 Bus.** ■

VK3

MOORABBIN AND DISTRICT RADIO CLUB MID-WINTER FIELD DAY JULY 13th RESULTS

SECTION A — VHF/UHF

1	**Philip Hapgood VK3ATI** Portable at Peters Hill near Anglesea	**35,505 points**
2	**Robert Harris VK3XQ** Portable at Wattle Hill, near Yea	**29,856 points**
3	**Robert Jennings VK3AVJ** Portable at Mt Worth	**25,111 points**

SECTION B — 10 METRES

1	**John Emery VK3UA** Portable at Mt Dandenong	**109 points**
2	**Len Mostert VK3NLP** Portable at Loch	**98 points**

The Club congratulates the winners and thanks all who participated especially the few whom operated on 10 metres.

It is hoped that support for the 10 metre section will be on a very much bigger scale next year. ■

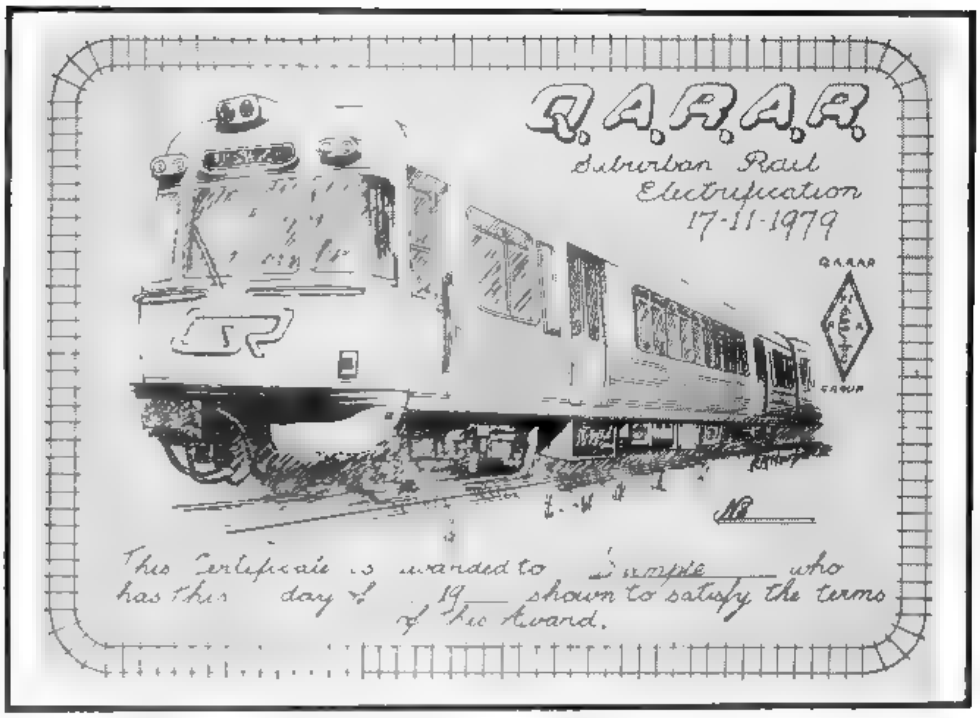
VK4

The annual meeting of the Ipswich and Districts Radio Club was held on the 4th of July at the Club building. The following officers were elected to office —

President Wayne Bryce VK4AB
Secretary Neil Harper VK4NLU/ZRI
Treasurer Peter Morris VK4NHR
Vice-President Ron England VK4NED/ZNS
Station Manager Milton Rowe VK4YR.
Public Relations Bill Jehn

The subjects are standing. M Rowe, seated from left, N Harper, W Bryce, P Morris, Bill Jehn. (Bill has been the public relations officer since the beginning of the Club eighteen years ago.)

Meetings are held on the first and third Wednesday of each month at the Club building in Deebing Street Denmark Hill, Ipswich. Visitors are welcome.



The Queensland Amateur Radio Association of Railwaymen have recently issued a new award. The award has been established to commemorate the inception of electric trains in Brisbane metropolitan area by the Queensland Government Railway. To qualify for the award an amateur or listener must either contact or log five contacts with Queensland amateurs who are or were employed by the QGR, one contact to be with a charter member. Contacts after 17th November 1979, are valid. Any mode or band may be used. Concessions may be given to interstate or overseas stations holding only a limited licence. Applications should contain a copy of relevant entries in the station log verified by a JP or full call amateur and $1 application fee.

Charter members are Barry VK4ABB, Frank VK4AFW, John VK4NIB, Bruce VK4NIQ and VK4NLU/ZRI.

A net is held for Queensland railwaymen each Tuesday night on 80m. All welcome.

Submitted by Neil Harper VK4NLU/ZRI. ■

AROUND THE TRADE

HIGH QUALITY HAND-HELD TYPE APPROVED

Vicom International Pty. Limited, of Eastern Road, South Melbourne, have been successful in obtaining type approval for two Danish hand-held VHF and UHF transceivers. Ingeniorfirma Gorm Niros appointed Vicom as their Australasian agents some months ago. The Niros 707 is a compact professional radio telephone to be used in the VHF low/high bands as well as UHF bands. It can be supplied with up to four channels with a power output of minimum 1 watt.

The Niros 707 is supplied in a stainless steel cabinet and meets the Danish Research Centre for Applied Electronics standards for shock, vibration and temperature. The unit is also waterproof and moisture resistant. The Niros Model 707 is supplied with selective calling for both transmitter and receiver. Offering up to 100 codes, the system utilizes the CCIR/ZVEI systems, making it compatible with most current operations.

Sound output of the audio loudspeaker measures 83 dBA at 1 kHz, measured 50 cm from the loudspeaker. This lightweight hand-held unit is also extremely efficient allowing its nickel cadmium batteries to power the unit for 12 hours with a five per cent transmission cycle. Recharging can be accomplished in one hour, with the use of one of the large range of chargers available.

The Niros range of transmission equipment is available now for demonstration from Vicom International, 68 Eastern Road, South Melbourne, or the Sydney office, 339 Pacific Highway, Crows Nest Melbourne (03) 699 6700 Sydney (02) 436 2766. ■

Redifon Telecommunications and Vicom International have recently signed an agency agreement which appoints Vicom International the sole Australasian Agent for the Redifon Telecommunications range of communications products.

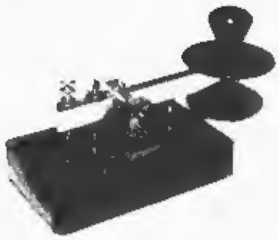
Redifon Telecommunications is a specialist company with more than 40 years experience in the design, manufacture and supply of radio communications and radio navigations equipment for civil, military and naval applications. It has particular expertise in planning, installation and commissioning of complete turn-key systems.

Of particular interest in the range is the Redifon R1000 series of remote controlled HF receivers. This microprocessor controlled receiver (probably one of the most advanced available in the world today) controls all the functions including antenna selection, channel, scanning, mode, bandwidth — the unit even supplies standard RS232 interface for direct connections to communicators or computers.

For information pertaining to any of the Redifon range of equipment Vicom International can be contacted at their Melbourne Head Office, telephone (03) 699 6700, or the Sydney branch, 339 Pacific Highway, Crows Nets, telephone (02) 436 2766. ■

AT LAST!

THE TYPE 610 BRITISH POST OFFICE designed MORSE CODE KEY



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INTERNATIONAL NEWS

AMATEUR STATISTICS

According to the latest statistics compiled by IARU from members societies' returns, the countries with the highest number of amateurs are shown as — Japan 399,915, USA 380,000, West Germany 35,055, USSR 26,000, UK 25,000, Argentina 23,500, Canada 19,000, Brazil 17,200, Italy 17,000 Venezuela 11,000, Australia 10,587 and France 10,015; all others are under 10,000. Society memberships are given as:— USA 155,000 USSR 142,000, Japan 109,236, Yugoslavia 54,061, West Germany 38,929, UK 24,000, Brazil 22,000, Spain 14,917, Czechoslovakia 11,986, France and Italy each with 11,800. Annual licence fees in US $ vary considerably, but of the larger-population countries the rates are given as — USA nil, Japan 1.60, West Germany 20.00, UK 13.00, Canada 15.50, Brazil 1.50, Italy 4.00, France 25.00. Age requirements vary from 21 downwards. High power (1 kW) is allowed in Bulgaria, Finland, East Germany (2 kW), Israel, Ivory Coast, Jordan, Lebanon, Liberia, Yugoslavia, Philippines, Thailand, W. Samoa and most countries of the Americas. Third party traffic is shown as permitted in Ghana, Gibraltar, Israel, Jordan and numerous countries in the Americas. In many countries membership of the national society is a requisite for amateur licensing.

CCIR

An ITU CCIR Study Group is scheduled to meet in Geneva from 27th November to 19th December to consider various technical questions generated in national CCIR study groups. Because these questions can have an impact on the deliberations at subsequent specialised WARCs (about a dozen are scheduled in this decade), IARU will be represented.

WARC MOBILE

The ITU has announced a WARC to consider the Mobile Service to be held in Geneva from 2nd March, 1982, for three weeks and three days. Some agenda items will be of concern to the amateur service and accordingly IARU is arranging for an observer team to attend.

NZ NEWS

According to Break-In July 1980 the NZART has received letters from their Director of Telecommunication operations advising that steps are in hand to increase the validity of the Novice licence from one to two years. Concern was expressed by NZART that new and used radio equipment could be readily purchased and used by unlicensed operators. The Director advised that the possibility of passing legislation prohibiting the sale of amateur radio equipment to other than licensed amateur radio operators is not favoured at this time for various reasons, including problems of equipment exchange between amateur operators. Another letter from the Director advised a change in the system of re-allocation of call signs. Henceforth a call sign once allocated will be permanently retained by the licensed amateur operator irrespective of where the stations is located — except for progressions Grade III to Grade II. Callsigns are not re-allocated until after two years from the date of dismantling a station for whatever reason. All this was also in recognition of the personal attachment most amateur licensees develop towards the call sign allocated to them.

IARU MEMBERS

Four new members have been admitted to IARU. These are Montserrat Amateur Radio Society, Federacion de Radioaficionados de Cuba, Radio Society of the Gambia and the Solomon Islands Radio Society. This brings IARU membership up to 111. ■

ALARA

AUSTRALIAN LADIES' AMATEUR RADIO ASSOCIATION

YL Activity Day is continuing to be a success. The aims are to meet and get to know YLs normally only contacted briefly in contests, without contest pressure; to have more personal QSOs than are possible in a formal YL net; to meet old and new YL friends without the necessity of making and keeping numerous skeds; and to help an OMs who may need a quick contact for a YL award.

Call "CQ YL" on the hour every hour on the sixth (GMT) day of each month. If it turns out that there are too many people on a particular frequency, feel free to QSY, have your chat, and then rejoin the group. Look for YLs on 3.688, 7.088, 14.288, 21.188, 28.688 MHz.

For those who prefere CW contacts, the frequencies are 28.058, 28.133, 21.058, 21.133, 14.058 and 14.133 MHz.

Our congratulations to:

Bronwyn VK5NBV, who gave birth to a 7 lb. 2 oz. boy, her second son.

Margaret VK3NHD, who passed her theory exam. She now also has the call sign **VK3YYL**. Margaret lives on a farm in Echuca, and recently called in at an ALARA meeting in Melbourne. We hope she'll join us again soon.

The two new full calls in VK5, **Vicky VK5FK** and **Jenny VK5ANW**.

Four new members of ALARA are **Joy VK2VJV, Josie VK4VAN, Beryl VK2VDS** and **Yvonne VK3VON**. Joy lives in the small town of Yeoval and is the only "ham" there. Josie is a member of the Redcliffe Radio Club; she has three children and three grandchildren. Beryl is from Charlestown; she shares her rig with one son and has a regular sked with the other son in Tasmania. Yvonne is the only licensed YL in the Ballarat area, and she is trying to get YLs interested in taking classes for the novice exam.

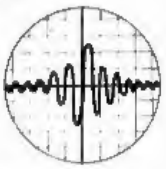
The ALARA net is at **0930 GMT** at **3.582 MHz** every **Monday** night. Net controller is Geraldine **VK2NQI**.

The **VK4 YL** net meets every **Tuesday** night at **1000 GMT** on **3.575 MHz**.

YLS interested in joining ALARA should contact Daurel VK3ANL, Box 110, Blackburn 3130.

Maggie VK3NOQ. ■

IF YOU'RE NOT BUYING AMATEUR RADIO ACTION



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SILENT KEYS

It is with deep regret that we record the passing of —

Mr. V. R. P. COOK	VK5AC
Mr. K. F. LEE	VK4ALE
Mr. R. F. MUSSETT	VK3AIX
Mr. W. D. D. HARWOOD	VK3SR

OBITUARY

KEITH FRANK LEE VK4ALE

It is with deep regret that I announce the untimely passing of Keith VK4ALE, age 42 years, victim of a motor accident on 31st August, 1980. Although only a relative newcomer to amateur radio (attaining his novice call VK4NIX at the May, 1978, exam and his full call in December, 1979), he made numerous friends on air, but in the main preferring to talk to a few specials. At the time of his death he was getting interested in 2 metre sideband from his QTH in the Central Highlands to the coastal areas. He was a foundation member of the Gemfields Radio Group, helping to set up the Group's affiliation with the WIA, Qld. Division. On behalf of this Group and other amateurs within the fraternity, I wish to offer our condolences to his wife, Sue, and his two small children in their tragic loss. We here in the Group will miss a true friend.

GORDON LOVEDAY VK4ZBI/NMJ. ■

RUSS MUSSETT VK3AIX

Here was a true radio ham of a type unknown to the recent newer ham. He used to build the entire rig from the microphone to the aerial — no mean feat in these days.

The signal from his home-made SSB transceiver was second to none, and still is. Fancy winding min. I/F transformers and other small components in the rig.

This was the Russ we knew.

He will be missed by all of us "Oldies" of the North Suburban Amateur Radio Group and he will be remembered by all of us as a true make your own type of ham, very rare in these days of the black box.

How often do we hear of a fellow who, after many unhappy events, reaches retirement, gets a nice new car, has a happy future in his sights only to suddenly die.

We will always remember Russ Mussett VK3AIX.

To his XYL Beryl and their respective families we extend our deepest sympathy.

Basil Rogers VK3ABJ.
Ted Howell VK3ZKP.
Historian of NSARG. ■

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FOR SALE

TS180S complete with 2nd SSB filter and CW filter, 3 months old, $1150. Ph. (03) 729 8482 (AH).

Kenwood TS600 6m Multi-Mode Txcvr, $450. VK2YEV, QTHR. Ph. (049) 49 7546.

KP202 2m, hand held, with nicads and charger, repeater 2, 4, 6 & 8, simplex 40 and 50, Scalar antenna, VGC, $120 ONO. Leo VK3ZGF, QTHR. Ph. (03) 25 3988.

Kenwood TS120S, $600; Drake WV4 wattmeter, $60; Oscilloscope Serviscope 10 MHz inc. handbook, $100; Icom IC202, $150; National video camera and portable recorder and charger, $500. VK5AS, QTHR. Ph. (086) 29 2174 AH, (086) 29 2199 Bus.

Aida 103 SSB/CW Txcvr, solid state with dynamic mike, 250 watts SSB input, 250W CW, with noise blanker, 100 kHz and 25 kHz calibrator, heavy duty power supply, mint cond., as new, service manual supplied also, $425. John L20252. Ph. (02) 389 6455 Bus. P.O. Box 505, Bondi Junction, 2022, NSW.

Collins 75A, 4 ham bands Rx, 160-10m in 1 MHz bands, mechanical filters 0.5, 3 & 6 kHz, passband tuning a la TS120 etc., valves tested, completely re-aligned, very stable, uncrunchable front end, includes manual, spare VFO, $475; Atlas 210X and DD6 digital dial, DD6 doubles as freq. counter to 50 MHz, $400; Cybernet CB on 10m, exc. performance, $100; Europa TV Tr, 10m-2m, solid state Rx, 6/40 in PA, useable with most valve HF rigs, e.g. FT901, TS520 etc., $80. Prices all ONO. Call Ken VK5ZEA. Ph. (08) 51 9689 Bus.

Yaesu FT223, 2m FM Txcvr 10W 23 ch. with 12 fitted, $200, as new; Belcom 2m SSB 10W synth. Tcvr, $200. Ph. Steve (02) 674 2104, after 5.30 p.m.

Kenwood TR-7500, 40 channel PLL, 146-147 MHz, mobile, $250. VK4ZN. Ph. (075) 32 1885.

Exciter ex FM Tx, 406 to 556 MHz out in 0.5 MHz steps, 4 x 150 and 4C x 250 tubes in sockets, 35W out, no power supply, $140; Frontier LA6, 6m linear, single 4C x 250, full output with less than 5W input, $345; Collins 30L1 linear, perfect, $535. VK1VP, QTHR. Ph. (062) 46 6682 AH.

FT901DM with SP901 Speaker and YO148 desk mic., complete in original packing, $1385 ONO; TS820 in VGC, $650; Drake model TR4C Txcvr with AC-4C power supply and 34-PNB noise blanker with spares and RV-4C remote VFO, complete in original pack., $485 ONO; Linear amplifier Alpha 77DX, pair of 8877's ceramic/metal triodes in G/G in, output, tuneable 1.8-30 MHz continuous, POA. Greg VK3BIB. Ph. (055) 4630 AH only.

50ft Telescopic TV Tower, no rust, has carried rotator, TH3 tri-bander and dipoles. VK3JY, QTHR. Ph. (03) 836 3841 AH, (03) 347 4850 Bus.

Co-axial Cable Siemens V45466-P4-B5 and V45466 DS-BS, eq. to PT29M and PT20M, double screened 75 ohm, 25c per metre; Capacitors, 1000 uFd, 50V, DCW, 800 uFd, 35V, non polar, 4uFd, 400V oil, 250 uFd, 50V paper foil; 3 gang tuning caps, small size, valves, 4CX125 811 As. VK4WR, QTHR. Ph. (071) 41 1315.

TR2200A, hand held, xtals for English-European 2m channels S20, S21, S22, S23 and S24 simplex, repeaters 3, 4, 5, 6 and 7, copy of internat. VHF FM guide, $70; Phillips UHF radiotelephone, rep. 450-470 MHz, 5W output, all solid state, brand new, rack mounted 21-53V DC supply, easily converted to amateur band or may be a repeater, $150. VK4ZF, QTHR. Ph. (07) 390 3328.

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2m Hand Held Txcvr, Standard SRC146, VGC, Ch. 40, 50 and 3 rpts., xtals for rpts. 2, 3, 4, 5, 6, 7, 8, telescopic whip and rubber ducky ants., ext. noise cancelling mic., solid leather case, nicads, charger, handbook, $170. VK3AFW, QTHR. Ph. (03) 579 5600.

Complete Station: FT101E in mint cond., c/w manual and original carton, professionally modified for Novice use, Hidaka VS33 triband heavy duty yagi and Emotator rotator with control unit and cable to suit, all in perfect as new working order, the lot $1095; genuine reason for sale. Mario VK3NZF, QTHR. Ph. (03) 311 8936 AH, (03) 68 3204, etx. 42 Bus.

Frequency Counter, 100 kHz to 600 MHz, in-built pre-scaler, input level meter and dual regulated power supply, $105; Heath IM17 FET multimeter, with PK3 RF probe, $40. VK2WD, QTHR. Ph. (02) 427 6080.

FT-7 Txcvr., as new cond., original, no mods., comes complete with 2 xtals for 10m, i.e. 28.0 to 29.0 MHz, genuine reason for sale, $400. VK1DX, ex VK1NAI, QTHR. Ph. (062) 68 2430.

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RF550 Speech Processor, $100, or exchange for radio gear. Wanted: Cat's whisker detector in glass tube. VK6GE. Ph. (09) 349 7247.

Kenwood 2m Multimode TS700SP digital, VOX, blanker, selectable sideband and selectable RPT offset, etc., used 1 hour only, definitely showroom cond., extremely low price. VK2AAM. Ph. (049) 2 0321 Bus., (049) 43 8910 AH.

Astro 200 HF Txcvr., fully synthesised, 80 to 10m, must sell, $500, ONO; Kenwood TR7625, new cond., with noise cancelling mic., $300. Bob VK4AWK, 67 Wilks Street, Cairns 4870. Ph. (070) 54 2385.

Kenwood TR7400A Txcvr., 2m, 25 watt, mobile, digital, $250; complete, plus two antennas, lots of coax. VK2CE, QTHR. Ph. (02) 871 7758.

Swan 240 Txcvr., with AC power supply, maintenance manual, spare output valve, 20, 40 80m, $150; 2m AWA carphone Jr. MR6 with xtals simplex 40, ch. 2, 3, 4, 5, 6, 8, $50. VK3ZGS, QTHR. Ph. (054) 46 8795.

Ken KP202, 2m, hand-held, ch. 40, 50, repeaters 2, 3, 4, 5, 6, 7, 8, nicads, charger, ¼ wave and helical ant., $150. VK2ASI, QTHR. Ph. (067) 65 7947 AH.

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Yaesu FR100B Rx., 160 through 10m, with FM detector, in good working order, complete with h'book and all modification details, $200; Yaesu FL200B transmitter, 80 through 10m, not working on 10m and audio needs attention, otherwise okay, complete with h'book and all modification details, $150; Rx and Tx are complete with a moderate number of spares. R. Champness VK3UG, QTHR. Ph. (057) 62 1454 AH.

Yaesu FT-7B Txcvr., had very little use, covers 10-80m, has been professionally tuned over all bands, approx. 70 watts actual output, $520. Ph. John (054) 84 1777 after 5.30 p.m. QTHR.

Yaesu FT707, FP707 and YO146 Desk Mic., as new, forced sale, cost over $1000, sell $900, ONO; Yaesu FTDX100 80-8m and 3 aux., 140W input, take $350; Star SR700A AM Rx., and 5 aux., v/selectivity and notch filter, $120. VK2AOV, QTHR. Ph. (060) 21 4811.

Kenwood TS-120V with mobile bracket, owner and workshop manuals, mic., $500, ONO. B. Wills VK4ABY, Kent Street, Forest Hill, Q. 4342. Ph. (075) 65 4354.

FT227R Memorizer, 800 channels, exc. cond., complete with mic., manual, mobile mount and hardware, sell for $270. Contact John Brereton VK5NHB, QTH.

Kenwood TS180S, new, $180; TR8000, new, $475; TR2400, new, $300; VFO 120, new, $120; AT120, new, $90; FTDX400, mint, $350; FT7, as new, $350; Drake TR4B, spotless, AC and DC supplies, $500; TS120S, new, $630. Ph. Cliff (065) 52 4477 Bus., (065) 59 1508 AH.

Wolmec Tape Gear, comprising tape punch and reader, configured for ASCII but may be modified for Baudot, heavy duty power supply and keyboard with diode encoder (ASCII), $80. VK5BI, QTHR. Ph. (08) 45 6140 AH, (08) 45 0023 Bus.

GE Galaxy 5 HF Txcrv., 80 through 10m, 300W PEP, new finals fitted, may be heard on air, complete with PS, instructions, etc., $260, ONO. Hans Smit VK5YX, QTHR. Ph. (08) 74 2350.

Swan 400 Txcvr., external VFO (spare valves), $250, ONO; Yaesu FT75 with VFO, AC and DC power supply (spare valves), $300; Taylor 32B CRO 5 in., suit RTTY, $50, ONO. VK6XO, QTHR. Ph. (099) 21 0137 Bus., (099) 21 2271 AH; will return calls.

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Amateur Radio Station comprising Swan hybrid Txcvr., model 750CW-SS16B, 550W PEP SSB/360W CW, 3.5 to 29.7 MHz, fitted ultra selective 16 pole SSB IF filter, shape factor 1.26 response, active 80/100 Hz CW filter, crystal calibrator 25 or 100 kHz, CW audio sidetone, PTT or VOX select, this rig only model in VKland, separate combined power supply and speaker unit 230XC, plus Shure 444 desk type mic., also relevant handbooks and comprehensive kit of support spares supplied by Swan, comprising full complement of tubes, transistors, diodes, integrated circuits, dial lamps, resistors, selected capacitors, relays and essential front panel controls, first class cond., two years old, cost $1300 total, will accept $750, ONO, free delivery Sydney/Newcastle areas, otherwise buyer pays freight onwards. VK2BFJ, 90 Wyong Road, Killarney Vale, NSW 2261. Ph. (043) 32 5758 (Central Coast) any time.

Lafayette HA800B Rx., all solid state, dual freq. conversion, amateur bands, 80 to 6m, AM, SSB, CW, standby, remote, built-in power supply, 240V, original carton and handbook, in excellent cond., $110. VK2VHP, QTHR. Ph. (02) 84 2195 after 7 p.m.

Yaesu FT101B Transceiver, had little us, in exc. cond., complete with spare set of finals, manual, leads and orig. packing, $595. Colin, QTHR. Ph. (03) 876 1987.

Drake MN2000 ATU, as new, with built-in SWR/watt meter, will handle 2 kW, $230. VK3PR, QTHR. Ph. (056) 62 2711.

Swan Cygnet 300B HF Txcvr., in good cond., with mic., DC power supply, manual, in orig. carton, no mods., $490 or best offer. K. Blume VK2BJK, QTHR. Ph. (02) 449 1598.

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Icom IC245 tunable 12V 2m FM transceiver, $285; Hanson VTVM, $35; Vinten MTR 13 with 2, 4 and 8, 40, 50 and V, $40. VK3OH, QTHR. Ph. (03) 277 4623.

Uniden 2020, good cond. Ph. (03) 791 2947 AH.

Yaesu FT101 with blower, as new, only used now and again when portable, complete with mic. both power leads and instruction manual, $525. Bert VK3BH, QTHR. Ph. (03) 60 1204.

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Eddystone, Model 750 Double Conversion Rx, 480 kHz to 32 MHz, exc. cond., complete with S meter, spare set of valves and handbooks, $120. VK3VF, QTHR. Ph. (03) 723 3554.

Yaesu FT101E, 1 year old, in very good cond., with all books, cables and packing, must sell, $600, ONO. Ken VK3AKK, Ph. (03) 686 9295 Bus. (free STD call).

Frequency Counter, by non-linear systems, as new, ranges 0-10, 10-60 MHz, with prescaler (provided but unfinished), 250 MHz prescaler requires 1 integrated circuit, unit is portable, small, digital and includes nicads and charger, $200, ONO. VK4NGK/ZQZ, QTHR.

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General Coverage Receiver, 0.5-30 MHz, FRG-7 or similar. Price and particulars to VK3AMT, QTHR. Ph. (059) 86 2601.

Kenwood TS600(A) 6m all mode Tcvr. Contact Neville VK2QF, QTHR. Ph. (063) 7384-U, week nights.

FTV650 or similar commercial 6m transverter, will consider faulty unit at reasonable price. Details by mail please. VK3AFW, QTHR.

Daiwa 2m FM Receiver, prefer some xtals fitted, especially ch. 3 and 7, also want 70 cm module to suit Yaesu FTV-901R V/U transverter. Geoff VK2AZT. Ph. (069) 42 1382 with prices.

Old Traegar TM2 Transceiver information and schematic diagram for Cybernet (PLL) Bushranger CB. Require mobile rig or 11b-80m-10m transverter (schematic OK). E. Greenfield VK6NIE, C/-Salvado College, New Norcia, 6509.

Xtals to suit Yaesu FL-50, 3.5 MC, 8672.4 KC — 8672.4 KC 7 MC 12.172.4 KC — 12272 KC 14 MC 8.827.6 KC — 9.127.6 KC 21 MC 15.827 KC — 16127 KC 28 MC 22827.6 KC — 23327.6 KC. Jack VK5JT, QTHR.

High Tension Transformer, suitable for 400W PEP linear. Keith VK6NGU/4. Ph. (07) 262 3555 AH.

FV101B External VFO, complete with cables, suit FT101E, must be top cond., details and price Doug VK2BKT, QTHR. Ph. (02) 48 1911.

Young almost penniless new Novice needs a simple transmitter or transceiver for work on 80m, other bands if possible. Contact R. Champness VK3UG, QTHR. Ph. (057) 62 1454 AH.

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Alpha Linear Amplifier 78PAE, uses 3 EIMAC 8874 tubes, 1-30 MHz, maximum legal power plus, $2095; Ham III CDE antenna rotator with 100 ft. Belden cable, $225; Shure 404C hand-held mics., $50 ea. James VK2JO, GPO Box 5076, Sydney 2001. Ph. (02) 799 5566 or (02) 36 7756.

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